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THE IMPORTANCE OF THE DAILY VARIABILITY OF DIABETES*

F. L. ROGERS, M. D.,
Lincoln.

During recent months there have developed important changes in the treatment of diabetes mellitus. These changes have been brought about to a large extent by the discovery of protamine insulin. Protamines added to insulin cause a flocculant precipitate to form. This precipitate, which contains the insulin, is slowly soluble in body tissues. In this manner a prolonged insulin action is obtained which continued until absorption of the precipitate is complete.

Numerous excellent reports regarding the use and advantages of protamine insulin have appeared in the medical literature. I have had occasion to establish sixty-four patients on protamine insulin during the past year. These cases were all seen in private practice. They represent all degrees of severity. They vary from one to eighty years of age. Most of these cases had previously used old or regular insulin. In only two of these cases have I felt that protamine insulin has not been of assistance, and in only these two cases has the patient desired to discontinue its use in favor of old insulin without protamine. The great majority of these patients have been very grateful. They appreciate the fewer injections. As a rule their general health is improved because their diabetes is better controlled. Insulin reactions are less common. The cost of their insulin is somewhat reduced because unit for unit protamine insulin is more efficient than old insulin.

My year's experience has led me to use protamine insulin in practically all cases of diabetes mellitus requiring insulin. It is, however, often necessary to use old insulin in conjunction with

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protamine insulin in order to bring about a maximum diabetic control.

The object to be obtained in diabetic treatment is a blood sugar constantly within normal limits and the patient on an adequate diet. If the physician will keep this object constantly in mind it will be of great assistance to him. No two diabetics are exactly alike. Every case should be considered individually. If the blood sugar is not elevated on an adequate although possibly restricted diet, no insulin need be given. If the blood sugar is elevated, then insulin should be given.

It is helpful to consider not only the question of severity but also the question as to whether the hyperglycemia and resultant glycosuria are related to meals or whether they vary in other manners. Far too little consideration has been given to the variability of blood sugar and sugar excretion. We have considered that a rise of blood sugar and increased excretion of sugar occurs after each meal, much after the fashion seen in the sugar tolerance test. This has led to the giving of insulin before meals. Many diabetics do have a definite postprandial increase in blood sugar and sugar excretion. Many other cases show a daily variability of the blood sugar and sugar excretions not definitely related to meals. These cases often have sharp and high peaks of blood sugar and sugar excretion during the early morning hours before breakfast and others secondary peaks at other times of the day. These peaks show little relationship to meal time but a definite and persistent relationship to time of day. This daily variability explains a number of otherwise confusing and common observations, such as, the necessity for larger amounts of insulin in the morning than evening, insulin reactions during the afternoons in cases where equal doses of insulin are given before meals, and the finding of large amounts of sugar in the urine before breakfast when the patient was sugar free the previous evening, and in particular, the difficulty to adjust insulin so as to control sugar excretions throughout the day without causing insulin reactions. This variability is more common in the young and in the severe cases. However, it may occur in mild cases and may not be noted in severe cases. In a series of cases which I recently reported, I found this daily variability to a marked degree in approximately one-fourth of the cases, and of a moderate degree in one-half of the cases, while in one-fourth of the cases there was no considerable daily variability, but only variability related to meals.*

There are other important factors which may cause a variation in the diabetic picture. In a considerable number of cases physical exertion causes an increase in the patient's ability to burn sugar. This results in hyperglycemia and glycosuria at times when the patient's activity is reduced. On days when the patient works hard, he has troublesome insulin reactions. I have one patient who is a farmer and who finds it necessary to vary his insulin depending on his day's work. On Sundays he takes four times as much insulin as on the days when he works hard in the field. It is never well to attempt to establish a diabetic's diet and insulin while the patient is at rest. He will require more food and less insulin when he is up and about.

Probably the most common cause of variation in diabetic picture is a variation in the diet. It seems that most patients, in spite of careful instruction in regard to diet, will not follow the diet in a persistent manner. I think diets greatly restricted, elaborately explained, requiring much figuring and weighing, often defeat their own purpose. Worry, mental fatigue, pain and infections, cause a decrease in the patient's ability to burn sugar, and the possibility of such factors must be kept in mind.

An apparent variation in the severity of diabetes is seen early in the course of treatment. A diabetic on a constant diet may need 70 units of insulin a day to control the disease and two weeks later have insulin reactions on 15 units a day.

The more one observes diabetic patients the more one becomes aware of difficulty in keeping diabetic patients constantly sugar free. This is true of the severe cases in particular. I am quite certain that it is very seldom, if ever, that a severe diabetic is constantly sugar free. The results of treatment as measured by the general condition of the patient may be very satisfactory even though the blood sugar is not maintained within normal limits constantly and resultant glycosuria occurs. There is good reason to believe that a more nearly normal metabolism is obtained in these cases while excreting some sugar. However, this type of patient becomes rapidly worse and soon develops coma or other complications if insulin is withdrawn. Patients, and I think doctors, are often unaware of the incomplete control of diabetes. Too much reliance is placed on a single urine test or single blood sugar determination. The single test gives poor information as to the condition throughout the day. A twenty-four hour specimen is also unreliable. If the twenty-four hour specimen contains sugar we have little information as to when it was excreted. Certain yeasts and bacteria cause rapid fermentations of sugar which may cause a false negative twenty-four hour specimen. Keeping specimens in cool places and the use of preservatives does not entirely eliminate this error.

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*Rogers, F. L.: Daily Variation of Sugar Content of Blood and Urine During Treatment of Diabetes Mellitus. Arch. Int. Med., 57:1027, Mar., 1936.

This fundamental information is of great value in the treatment of diabetes. The treatment is diet, with or without insulin. The diet must always be adequate. The test of a diet's adequacy is whether or not it maintains the patient's normal weight while he is at his usual activity and does not lead to obesity. The question as to the amount and kind of insulin and the time of its administration can be answered by very simple reasoning if one remembers that diabetes may be from mild to severe, that blood sugar levels and the parallel sugar excretion may vary with meals or may vary with times of the day quite independent of meals, and that old insulin exerts a prompt and marked blood sugar lowering effect, while protamine insulin exerts a prolonged and mild effect.

The patient must be taught the fundamentals of diabetes. If he is an apt pupil more than fundamentals may be taught and will prove useful to him. The more the diabetic knows of his disease the safer he will be.

The diet should contain from two to two and one-half grams of protein for each five pounds of normal body weight. The question as to the relative amounts of carbohydrate and fat in the diet is still debatable. The old high fat diets have no place in modern diabetic treatment. Diets moderately high and high in carbohydrates both have their strong supporters and both are satisfactory. That the diet be constant is more important than the per cent or carbohydrate. It is my practice to prescribe a diet very similar to that taken by other members of the family, except no concentrated sugars and considerable restrictions of bread and potatoes. Such a diet is relatively high in carbohydrates and may increase the insulin requirement somewhat. This diet is, however easy to follow and is much more likely to be followed through the years than the diet requiring much special preparation. The diabetic is handicapped by his disease. It is our duty to reduce this handicap to a minimum. The patient should be instructed in regard to food values so that he may have a good variety of available foods without causing the total value of his diet to vary. Variations in total value of diet lead to glycosuria and insulin reactions.

The patient must be taught to take his insulin and to examine his urine. The whole question of variations in diabetic intensity may be brought to light by frequent urine analyses. It is my custom, and I have found it very helpful, to provide patients with a chart on which to record urine analyses. The chart calls for four urine analyses each day; one before breakfast, one mid-morning, one mid-afternoon and one in the evening. The patients are instructed to use fifty drops of Benedict's solution and ten drops of urine and, after boiling and cooling, record the color as blue, green, yellow, or red. A glance at the chart will show if the patient is running sugar and if so, at what time of the day and, roughly, in what amounts. This very simple chart, which the patient can easily be taught to fill out at home, discloses a very true picture of his diabetes. It is not necessary or advisable to have the patient keep such a chart constantly. The complete chart should be kept only during those times when particular investigation of the diabetes is necessary. A single analysis twice a week but at various times of the day, is sufficient for most of the time. The patient quickly learns the value of such records. Needless to say, much time and expense to the patient is saved in this manner.

The history, physical examination, preliminary laboratory tests and, in questionable cases, a few urine tests will quite definitely suggest the amount of insulin needed. Milder cases require no insulin, moderately severe cases may be started on from 10 to 20 units a day, and severe cases from 40 to 60 units a day. The several urinary tests each day showing sugar excretion, if any, and the time of its excretion and its amounts, will indicate changes in amounts of insulin, changes in its time of administration as well as indicating the use of old or protamine insulin. In the mild case, showing some sugar in most all specimens and in particular during the morning hours, a single morning dose of protamine insulin is as a rule sufficient. In most all the cases requiring less than 40 units a day, one dose will bring about satisfactory control. Occasionally a mild case will show sugar only after meals, the morning meal in particular. Protamine insulin in amounts sufficient to control the postprandial glycosuria may result in insulin reactions at other times of the day. In such cases one or more doses of old insulin given before meals will control. In the more severe cases showing much sugar during the morning and sugar to less extent during the afternoon and evening, protamine insulin during the evening and regular insulin before breakfast and possibly also at noon, will result in satisfactory control. In the most severe cases and those showing sharp peaks at various times of the day, a single dose of protamine insulin late in the day and several doses of old insulin given in anticipation of the peak will prove most satisfactory. These cases are the most difficult to control. It is often difficult and even impossible to keep them between insulin reactions on one hand and glycosuria on the other. If err we must, it is safe to advise the patient to run some sugar at certain times of the day rather than to subject him to repeated insulin reactions.

In the diabetic emergency Dr. Joslin's ingenious formula is most useful. This directs the testing of the urine every few hours, and the giving of insulin in amounts depending on the amount of sugar. No insulin if the reaction is blue, five units if green, ten units if yellow, and 15 units if red. In general, it is not well to be guided by separate rules for insulin administration. One must be guided by a knowledge of patient's whole picture and a knowledge of the action of each type of insulin.

Protamine insulin by its slow action differs in several ways from old insulin, and this difference should be mentioned. A patient started on protamine insulin does not receive the full anti-diabetic effect for several days. It is well, in starting protamine insulin, to give also from 5 to 15 units of old insulin in decreasing amounts during the first four or five days. Protamine insulin reactions are prolonged. They require prolonged treatment by small feedings during a number of hours rather than only the single feeding which relieves reactions with old insulin. The possibility of these prolonged reactions constitute the most serious objection of protamine insulin. The patient receiving protamine insulin should be thoroughly advised as to the nature and treatment of these reactions.

In conclusion, I would like to stress the advantage of determining the daily curve of sugar excretion and the use of protamine insulin as aids in the treatment of diabetes mellitus.

TENDON AND NERVE INJURIES IN FRACTURES AND DISLOCATIONS*

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The complicating injuries to soft tissue, especially those of tendons and nerves, are of paramont importance in traumatic lesions of the extremities, associated with fractures and dislocations. Injuries to important motor and sensory nerves are quite frequent, especially in the upper extremities. Here also injuries to the tendons controlling the hands and fingers are often the cause of major disabilities producing permanent changes which frequently account for more loss of function than the associated bony injury.

Our first consideration is with nerve and tendon injuries, associated with simple fractures and dislocations, which often are undiagnosed and the significance not appreciated until disability persists after union has taken place. In this group, nerve injuries are by far the more common, and an immediate lesion may develop as a result of contusion, avulsion or laceration by stretching. This may be due to the fracturing force, or the displacement of the bone as a whole, or its fragments. It is not amiss here to mention also the fact that injuries of this type occur all too frequently during the manipulation of a fracture or dislocation under anesthesia. This is of extreme importance and future embarrassment may be avoided by careful preliminary examination to determine evidence of nerve injury before the extremity is manipulated. Much information can be obtained by observation of fingers and toes, determining motor power, sensation and terminal circulation. These simple tests can be easily made and should be done before the anesthesia is administered for either a manipulation or open operative procedure.

Late nerve signs develop when the nerve is caught in callus or compressed by cicatrical fibrous tissue. A delayed lesion of this type may also be brought on as a result of pressure from a splint or plaster dressing. The radial nerve in the upper extremity and the external popliteal, as it winds about the neck of the fibula in the lower extremity, are the most frequent victims. The presence of a deformity may result in irritation from stretching and friction of a nerve, thus producing a slowly progressing selective paralysis, as seen in delayed ulnar involvement in old fractures of the elbow, in which there is marked increase in the carrying angle.

In general, tendon injuries are associated with compound fractures in which there is crushing and laceration of tissue. There are notable exceptions, such as avulsion of the long head of the biceps tendon in the arm, fracture of the lower pole of the patella with avulsion of the patellar tendon, laceration of the quadriceps tendon, and dislocation of the peroneal tendon with injuries about the ankle. A minor, and sometimes very disturbing disability, is that of the baseball or mallet finger, as a result of a chip fracture of the base of the distal phalanx to which is attached the extensor tendon. An unusual and interesting lesion of the wrist is the spontaneous rupture of the extensor longus pollicis, secondary to a fracture of the lower margin of the radius, involving the groove for this tendon.

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CLASSIFICATION

A classification of the more common tendon and nerve injuries from the standpoint of type of trauma and anatomic distribution should be of value in calling our attention to these important complications.

SIMPLE FRACTURES AND DISLOCATIONS

- Immediate:
  - Contusion, Avulsion
  - Compression, Laceration
  - Manipulative Traumatism
- Delayed:
  - Cicatrical Fibrous Tissue
  - Bony Callus Inclusion
  - Stretching and Friction

COMPOUND INJURIES

- Early:
  - Crushing Blows and Lacerations
    - Forearm, Hand and Fingers
    - Foot and Leg
  - "Side-swipe" Fracture of Elbow
  - "Dash-board" Lacerations at Knee
  - Gunshot Wounds
- Late:
  - Chronic Infection
  - Vicious Cicatrices

UPPER EXTREMITY LESION

- Dislocation of Shoulder
  - Supraclavicular Injury
    - Brachial Plexus
  - Infraclavicular Lesion
    - Circumflex Nerve
    - Cords of Plexus
- Fracture Shaft of Humerus
  - Radial Nerve
    - Immediate or Delayed
    - Operative Injury
- Elbow Injuries
  - Supracondylar Fracture
    - Median and Radial Nerves
    - Volkmann's Contracture
  - Dislocation of Elbow
    - Ulnar Nerve
    - Epicondylar Inclusion
  - Non-Union External Condyle
    - Delayed Ulnar Palsy
- Forearm Fractures
  - Upper Radius and Ulna
    - Posterior Interosseous
- Lesions of Wrist and Hand
  - Fracture Lower Radius
    - Sensory Branch Radial Nerve
    - Tendon External Pollicis Longus
  - Compound Injuries
    - Flexor Tendons
    - Ulnar and Median Nerves
  - Dislocation Semilunar
    - Median Nerve
  - Baseball Finger
    - Avulsion of Extensor Tendon at Base of Phalanx

LOWER EXTREMITY LESIONS

- Dislocation of Hip
  - Sciatic Nerve
- Fracture Shaft of Femur
  - Sciatic Compression-Splint
- Avulsion Patellar Poles
  - Quadriceps Tendon
  - Ligamentum Patellae
- Injuries Upper Leg
  - External Popliteal Nerve
    - Fracture Upper Fibula
    - Cast Pressure
- Fractures Lower Third of Tibia
  - Tibialis Anticus and Toe
    - Extensors

DIAGNOSIS

The diagnosis of injuries to nerves and tendons of the extremity involved should not be difficult if the essential anatomic nerve distribution is known, as well as the action of the muscles associated with the particular tendon laceration.

Briefly, the loss of ability to abduct the arm by deltoid action indicates injury to the circumflex nerve. The clinical picture of wrist drop means a musculo-spiral injury and sometimes it is difficult to determine whether this lesion is at the level of the radial groove in the middle third of the arm, or in the region of the elbow, where the posterior interosseous nerve passes around the upper end of the radius between the two heads of the suppinator muscle. With the latter injury, the paralysis is localized to the extensor carpi-ulnaris and the extensors of the fingers and thumb.

Injuries to the median nerve produce paralysis of the flexors of the wrist and fingers, the pronators of the forearm and the opponens group of the thumb, as well as the lumbricales of the index and middle finger. The extent, however, is dependent on the level of the lesion. The fourth and fifth fingers can be flexed through their ulnar enervation, although this is partially lost as a result of paralysis of the flexor digitorum sublimis, which is supplied entirely by the median nerve. Flattening of the thenar eminence is the outstanding deformity evident in the hand.

The ulnar nerve produces a rather characteristic clawhand, with flattening of the hypothenar eminence and interosseous atrophy. Here sensory loss is quite definite over the ulnar distribution of the fourth and fifth fingers, while in radial nerve injuries, the sensory change is not so extensive, usually consisting of a small area of anesthesia on the dorsal surface of the thumb and hand. The area of sensory loss with median nerve involvement is well localized to the palmar surface of thumb, index and middle finger and the radial side of the ring finger.

Involvement of the sciatic nerve produces a characteristic foot drop with sensation lost over the antero-lateral aspect of the leg and in the foot. More commonly than a complete sciatic paralysis is that of the external popliteal nerve, which may be injured as it goes superficially around the neck of the fibula. This again produces the characteristic foot drop as the deep peroneal division of this nerve supplies the tibialis anticus and the extensors of the toes, while the superficial peroneal supplies the peroneii muscles and a custaneous area over the lateral aspect of the lower leg and dorsum of the foot. Trophic disturbances are more often encountered in the lesions of the lower extremities than those of the upper.

TREATMENT

The treatment of tendon and nerve injuries is dependent upon the amount of damage and in general it may be stated that any tendon injury usually requires operative repair, as there should be no unsatisfied portion of tendon remaining. The same is not true with nerve injuries, excepting in situations where there is evidence of immediate, complete loss of motor power and sensation over the particular nerve involved.

In closed fractures with evidence of incomplete nerve injury conservative treatment with close observation should be tentatively employed, and if there is rather early evidence of recovery, exploration of the nerve is not indicated. It is important, however, during this period of conservative treatment, that the extremity be placed in such a position so that the paralyzed muscles are at rest and not over-stretched. This can be accomplished readily by splinting in optimum position of function and a systematic course of physiotherapy. This is particularly essential in a deltoid paralysis where abduction of the arm should be maintained, and in a wrist drop where the cock-up position is essential, with the fingers in extension and the thumb in abduction. In the lower extremity, it is extremely important that the foot be kept at right angles to the leg and the knee slightly flexed.

If recovery is very slow, and there is only questionable change in the course of three to six weeks, an exploratory should be seriously considered. With the development of a delayed paralysis, in which there are no signs of involvement at the time of injury, a neurolysis for the purpose of releasing the compressed nerve should be done as soon as the condition is recognized.

The technique of nerve and tendon suture has been so beautifully described by Summer Koch, Loyal Davis and Bunnell, that very little additional discussion is necessary here.

The principles as outlined by Koch are worthy of brief review, the first step being careful preliminary preparation and examination of the injured extremity.

Preparation has been quite uniformly standardized with the use of sterile soap and water as a cleanser, followed by washing with normal salt solution. This is preferable to any irritating antiseptic solution.

The arrest of hemmorhage by gentle compression and at the time of operative repair, the use of a constrictor, so that a clean, bloodless field may be had, is highly desirable. Some surgeons advise against the use of a tourniquet, due to prolonged disturbance of nutrition of the parts, which may retard repair and lower resistance to infection. The greater ease, however, in identifying the lacerated tendons and nerves, makes the constrictor a great aid and shortens the operating time many minutes.

Careful debridement and in the smaller lacerations, enlargement of the incision in the long axis of the extremity, is often necessary in order to properly identify the retracted tendon ends. It is hardly necessary to repeat that careful end to end suture with very fine silk is the procedure of choice, with the limb placed in such a position as to relax the sutured structures as much as possible. In general, this means flexion of the elbow in injuries to this region, as well as of the wrist and fingers in the repair of the distal tendons of the upper extremity. Repair of flexor tendons distal to the distal palmar crease in the hand, usually gives poor results. At Böhler's Clinic in Vienna, no attempt is made to repair this lesion. In our opinion, suturing should be done and the suggested plan of cutting the sublimis tendon away while the profundus is sutured, seems worth while. As a rule, suture of the flexor tendons of the thumb and the extensors of the fingers gives good functional recovery. It is important, particularly in suturing of this type, that active motions of the fingers be instituted within 24 to 48 hours, but that splinting be maintained during the intervals between redressments.

Closure of the wound is entirely dependent upon the amount of destruction of superficial tissue and skin. If this is not extensive, the closure should be complete, but without tension, using interrupted sutures throughout. If after debridement, there is considerable defect, Koch recommends immediate skin graft by either free full thickness grafts or pedunculated flaps. This is dependent, however, upon the location of the injury and the extent of gross contamination at time of the accident. Emphasis again is placed upon the importance of rest to the injured tissues and this is accomplished by the splinting which is essential in the treatment of the associated fracture.

CASE REPORTS

Case No. I. W. B., male, age 7 years.

Automobile accident in July, 1929, with severe stretching injury to left upper extremity in extreme abduction. Immediate complete paralysis of the entire left arm. No associated bone injury.

Seen by Dr. Schrock on December 27, 1929, five months after injury. Diagnosis of traction neuritis of brachial plexus, with whole arm paralysis was made and conservative treatment suggested in the form of statue of liberty splint with physical therapy in the form of massage and electrical stimulation with faradic and galvanic current. This was carried on for a period of three months.

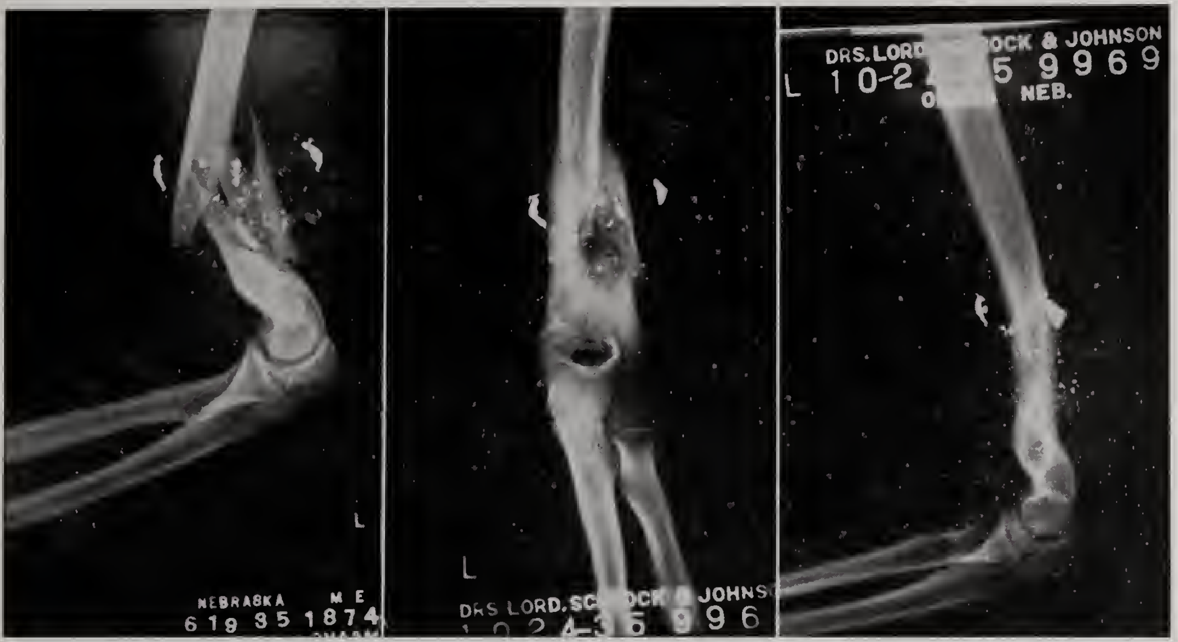

FIG. 1, CASE III.
Fig. 1, Case III (left): X-ray findings before reduction. Antero-posterior and lateral views four months after injury, (right).

Examination nine months later disclosed slight return in function of deltoid muscle. Seen in consultation with Drs. Young & Keegan. Exploration of brachial plexus considered, but not carried through.

Examination by Dr. J. J. Keegan on March 4th, 1931, two years following injury, disclosed fair function of the shoulder girdle group with some return of strength of the triceps and biceps muscles. There was complete return of sensation. The hand showed quite extensive, permanent paralysis.

Case No. II. W. S., male, Negro, age 29 years.

Admitted University Hospital, November 12, 1927.

History of gunshot wound involving the right arm four months previous to admission. A severe, compound, comminuted fracture of the shaft of the humerus was sustained.

Emergency care consisted of immediate open reduction of humerus with fixation by Lane plate. Infection developed with drainage for several weeks. One month previous to admission to the hospital, he developed tingling in the hand and fingers followed by complete wrist drop.

Examination of the righ upper extremity disclosed an old operative scar over the external aspect of the mid arm, which was moderately adherent. Union of the humerus was firm, but with localized tenderness over the site of fracture. There was a complete wrist drop with loss of sensation over the radial distribution.

X-ray examination disclosed an old, healed fracture of the mid third of the shaft of the humerus, with a Lane plate in position. Excessive callus formation was noted, especially over the posterior aspect of the humerus.

Operation November 15, 1927—H. F. J. Excision of old cicatrix, exposure of musculo-spiral nerve, which was found imbedded in the callus. The Lane plate was removed, the nerve released, and buried in muscle tissue.

Postoperative course was very satisfactory with complete recovery of musculo-spiral function in one year.

Case No. III. R. P., female, age 14 years.

This patient sustained a gunshot wound of the left elbow region on June 2, 1935, which produced three lacerated wounds in the left lower arm and a severe comminuted fracture of the lower shaft of the humerus, with immediate but incomplete loss of musculo-spiral function. Emergency care was rendered by Dr. C. R. Kennedy at the Methodist Hospital.

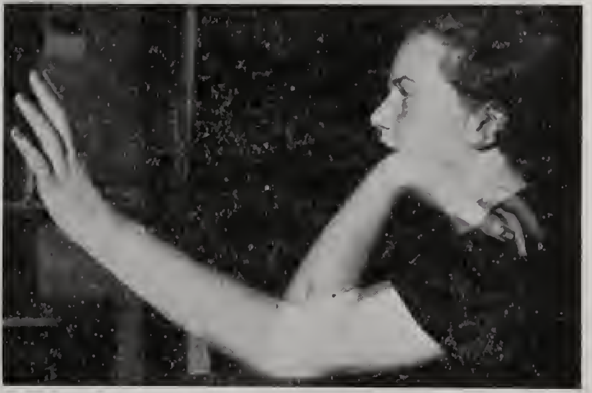

FIG. 2, CASE III.
Superimposed photograph showing range of motion four months after reduction.

First seen by us on June 21, 1935, following quiescence of acute infection. (Fig. 1).

Treatment consisted of manipulation of the left humerus and traction by Kirschner wire inserted through the olecranon process with ten pounds traction. The elbow was placed at right angles with five pounds skin traction upward on the forearm. Immobilization in a shoulder spica cast.

Following three weeks in traction, the Kirschner wire was incorporated in the plaster and patient made ambulatory.

July 26, shoulder spica and Kirschner wire removed, with application of posterior molded splint. Wrist drop still present, but to a less degree. One month later, all fixation discontinued. Following a course of physiotherapy, there was gradual return of radial nerve function.

End result two years following injury discloses complete flexion of the elbow, extension possible to 170 degrees, rotations of the forearm complete and no evidence of radial nerve paralysis. (Fig. 2).

Case No. IV. P. K. P., male, age 31 years.

At the age of ten years, this patient sustained an elbow injury, which produced no functional disability, but slight deformity of the left elbow. In 1931, three years previous to our first examination, he first noted numbness and tingling over the ulnar distribution of the fourth and fifth fingers. At times, loss of sensation was complete. There developed a gradual increasing wasting of the intrinsic muscles of the hand, with loss of strength in the fingers and flexor contractures of the fourth and fifth fingers. During the three months interval previous to our examination, symptoms in the left hand had increased considerably.

Examination: The left elbow presented some increase in the carrying angle, with prominence of the internal epicondyle, due to shifting of the forearm radialward. Motions in the elbow were complete.

The left hand presented marked intrinsic muscle wasting with semiflexion of the fourth and fifth fingers. Abduction and adduction of the fingers were definitely decreased in strength.

X-ray examination of the left elbow disclosed an old ununited fracture of the external condyle of the humerus, with increase in carrying angle. (Fig. 3).

Operation April 9, 1935, Methodist Hospital—R. D. S. and H. F. J. Through medial incision, the ulnar nerve was exposed and in the ulnar groove, there was found over a distance of one inch, a transverse fibrous band, producing constriction of the nerve. The neural sheath was definitely thickened.

Ulnar nerve transposed anteriorly between deep layers of superficial fascia and muscular aponeurosis.

Postoperative course. Gradual return of sensation in fourth and fifth fingers. Muscle wasting in hand persisted, but function and strength improved.

Last examination September 4, 1936, 1½ years following operation. Patient states strength in the hand was four times greater than before operation. The hypothenar and interosseous wasting was definitely less. Sensation has returned completely in all but the distal phalanx of the fifth finger.

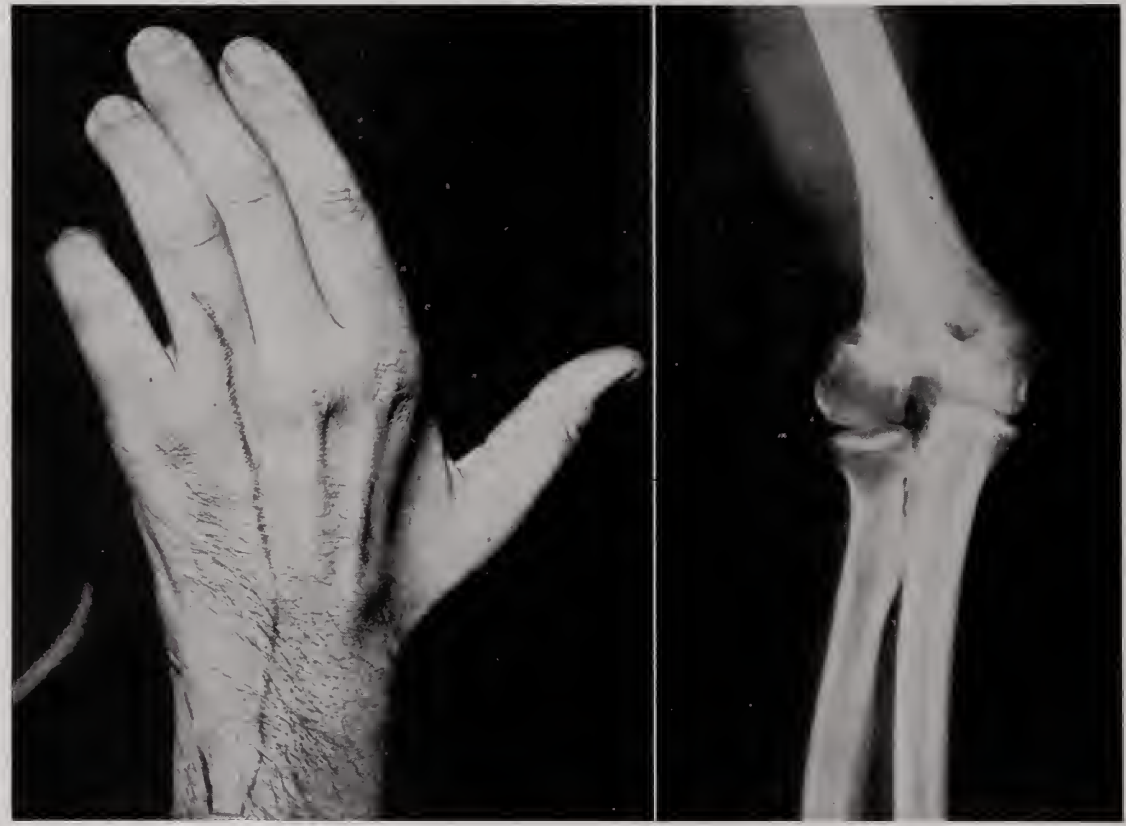

FIG. 3, CASE IV.

Typical claw hand of ulnar paralysis, showing area of anesthesia.
Non-union external condyle humerus with delayed ulnar paralysis.

Case No. V. A. A., female, age 43 years.

First seen August 15, 1934, with history of injury to left elbow region 40 years previous. Deformity of elbow since childhood, but with full function.

February, 1934, sustained twisting injury to left upper extremity, followed by anesthesia over fourth and fifth fingers and increasing wasting of the small muscles of the left hand.

Examination disclosed increased carrying angle, internal condyle very prominent, wasting of intrinsic muscles of hand, fourth and fifth fingers held in semiflexion with anesthesia over ulnar distribution.

November 15, 1934, exploration ulnar nerve at Immanuel Hospital—H. F. J. Transposition of nerve anterior to elbow in substance of pronator radii teres muscle. Nerve found definitely thinned out and flattened in the ulnar groove.

Examination May 1, 1937—2½ years after operation—discloses complete return of sensation and good function of the hand. Still some evidence of muscle wasting in the hand, which has decreased materially during the past six months.

Case No. VI. Mrs. N. B., female, age 38 years.

Admitted University Hospital, April 12, 1937.

December, 1936, patient developed painful swelling over the medial aspect of the right elbow in the region of the olecranon process. Immediately developed numbness and tingling over the fifth finger and weakness of the flexors of the ring and fifth finger of the right hand. Progressive symptoms with beginning wasting of the interossei muscles and definite numbness over fourth and fifth fingers.

Examination: Right elbow region presented definite soft tissue fullness over the medial epicondylar region. Full range of motion in the elbow, tenderness over mass on medial aspect, with referred pain along the ulnar distribution on firm pressure. Right hand presented early changes of ulnar nerve lesion with wasting in the interosseous spaces and particularly flattening of the web between index and thumb, indicating paralysis of the adductor pollicis. Area of anesthesia over fourth and fifth fingers.

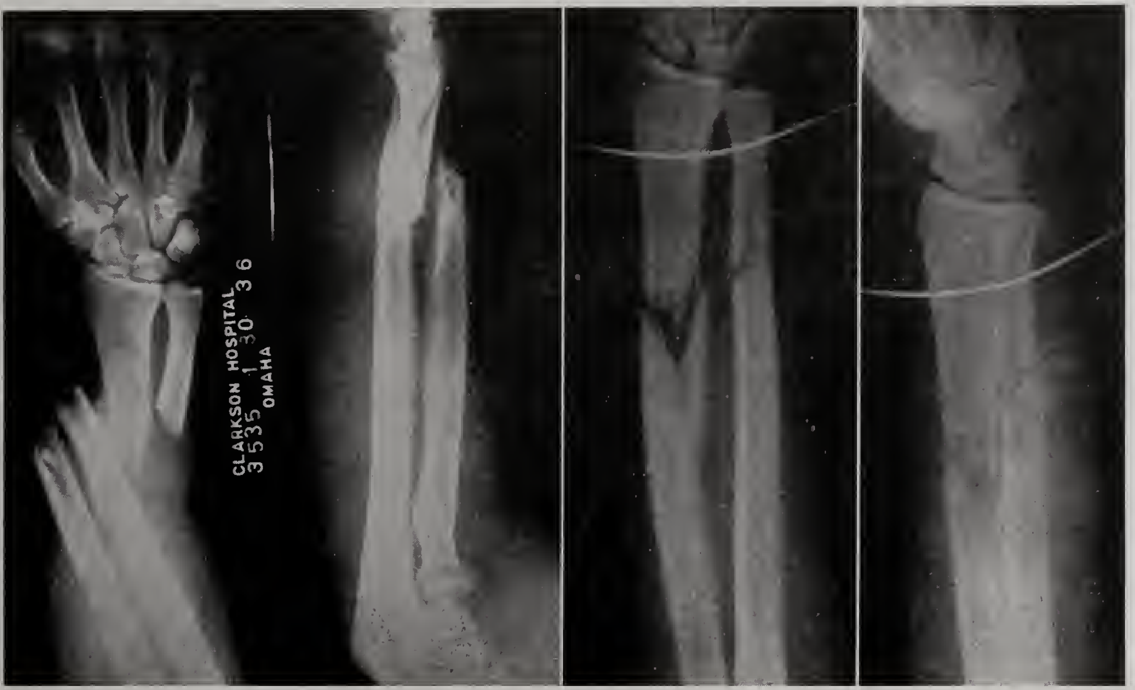

FIG. 4, CASE VIII.
Severe compound, comminuted fracture radius and ulna.
Reduction following operative procedures and Kirschner wire traction.

X-ray examination disclosed separation of distal margin of internal epicondyle, with two oval bodies detached from this process. Soft tissue swelling region of ulnar groove suggestive of ulnar bursitis.

Operation April 20, 1937—H. F. J. Exposure of cystic mass similar to a ganglion, filling the ulnar groove. Also two calcareus bodies which were removed. Ulnar nerve transferred anteriorly into substance of pronator radii teres.

Post operative course. Sensation was definitely improved within one week after operation.

Final end result not yet determined due to recent date of operation.

(Note: Since October of 1933, 13 cases of delayed ulnar paralysis have been observed by us—L. S. & J.—9 of which were secondary to old fractures of the external condyle of the humerus, with non-union. 5 were as a result of fractures of the internal condyle, with malposition and non-union. These are to be reported at a later date when final end results are obtainable.)

Case No. VII. T. W., male, age 20 years. Injury January 18, 1928. Left upper caught in belt, patient thrown about by force of machinery. Severe compound, comminuted fracture radius and ulna, middle third, with posterior dislocation of elbow.

Seen by R. D. S. on January 22, 1928. Tremendous hematoma in anticubital region, with injury to median, radial and ulnar nerves.

January 24, 1928, reduction under fluorscope, traction, molded splint.

March 18, 1928, beginning return of sensation in fingers in the form of formication.

April 17, 1928, union forearm quite firm, ulnar sensations returning, median nerve out.

May 29, 1928, elbow motions to 30 degrees, calcareus shadow noted in anticubital space.

July, 1928, hyperasthesia over median distribution.

December 8, 1928, approximately one year following injury, calcareus mass in anticubital space somewhat smaller. Complete return of ulnar, radial and almost normal median sensation.

Case No. VIII. F. T., male, age 23 years.

Admitted to Clarkson Hospital on January 30, 1936.

One hour previous to admission, this patient sustained a severe compound, comminuted fracture of the lower third of the radius and ulna when his right hand was caught in a feed grinder. The distal end of the proximal fragment of both bones penetrated through an anterior wound. These were grossly contaminated with dirt.

Emergency care—H. F. J.—consisted of immediate clean-up of the lacerated wound, careful debridement, reduction of the fracture of the radius through the compound wound, repair of four lacerated tendons of the forearm, and application of Kirschner wire traction to distal fragments of radius and ulna. 3000 units of combined serum given.

Immediate check-up x-ray showed satisfactory reduction of radius. Ulna not in apposition.

Lacerated wounds healed without infection.

One week following injury, open reduction performed on ulna, using no internal fixation.

Check-up x-ray, Figure 4.

Postoperative course very satisfactory.

Kirschner wire removed March 6, 1936.

Delayed union in both bones, which necessitated bone graft operation on ulna, April 21, 1937.

Surprisingly good function of hand and fingers as disclosed by photograph. (Figure 5).

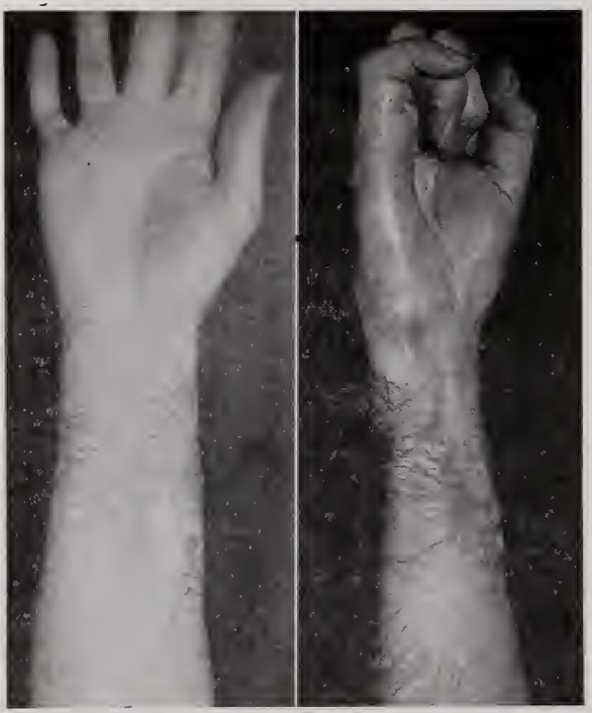

FIG. 5, CASE VIII.
Functional end result 16 months following injury.

At present time, working actively as a farmer, wearing a molded leather forearm splint as protection against unusual strain.

Case No. IX. R. E. B., male.

History of fracture left femur in May, 1931. Also severe injury to right foot and head injury.

Patient states that following an open reduction on the fracture of the left femur, there was paralysis of the left leg. A foot drop with subsequent contracture of the tendo-Achilles and inversion of the foot followed, which has been persistent.

Seen by H. F. J. on November 16, 1936. Walking with the aid of two canes, the left foot presenting complete foot drop, with definite disturbance in circulation of the distal portion of the left foot. Sensory changes of only slight degree.

X-ray examination disclosed a well healed fracture of the mid third of the left femur, with some malposition and overriding.

December 4, 1936: Exploration of sciatic nerve throughout its entire length and found bound down in the middle third of the thigh.

December 9, 1936: Plastic lengthening of tendo-Achilles, manipulation left foot. Cast applied.

Slight improvement, some power of inversion and eversion, although no evidence of return of tibialis anticus.

May 3, 1937: Exploration of external popliteal nerve, which was found tightly compressed against the neck of the fibula. Nerve filaments beyond this, especially of the deep peroneal division, were very pale and showed evidence of degeneration. Nerve released and placed more superficial between muscle fibers of peroneus longus and superficial fascia. Resection of mid tarsal region of the foot—head of astragalus and portion of scaphoid—for the purpose of correcting the varus deformity. Resection of head of fifth metatarsal. Application of boot cast with foot in complete correction.

Present time: Patient is in plaster dressing.

Care in these combined injuries is always a long tedious one. However, careful attention to splinting, early active movements with only a portion of the fixation dressing removed, and systematic physiotherapy in the form of gentle massage, manipulation of joints to the point of tolerance, and stimulation by faradic and galvanic currents over a considerable period of time, yields surprisingly good functional results.

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RELATION OF SANATORIUM TO TREATMENT OF TUBERCULOSIS

LeRoy S. Peters, Albuquerque, N. M. (*Journal A. M. A.*, Nov. 7, 1936), reasserts that Dr. Traudeau's experiment in the Saranac Lake section started the country on a sanatorium-building period which ultimately placed sanatoriums in practically every state in the union. In the early days the sanatorium treatment consisted of rest, good food, fresh air and expert supervision. There was little else to offer the patient. The progress of the disease had to be watched and the prognosis given by what the clinician could gather from physical examination and clinical symptoms alone. The advent of the x-rays and the various laboratory tests for determining activity and the progress in general were yet to come. Sanatoriums can boast results that were never dreamed of by home treatment, because there is nursing supervision and routine is carefully looked after. Education of the tuberculous is best accomplished in the institutions. There is no more comparison between the sanatorium-educated patient and the home patient than there is between the correspondence school pupil and the student of a recognized university. The one is as handicapped in his fight for continued health as the other in his struggle for economic existence.

THORACIC WALL INJURIES COMPLICATED BY LESIONS TO THORACIC AND ABDOMINAL VISCERA: EMERGENCY TREATMENT*

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In this paper we wish to outline the treatment of extensive chest injuries, due to crushing violence, in which there are multiple fractures of the ribs, with or without sternal fractures, and which also present abdominal symptoms. In fact, these injuries present so many abdominal signs it is necessary to analyze them carefully and in succession, as well as in a group. And it must be remembered that when we encounter an extensive injury of the trunk, the possibility of a pelvic injury must also be considered.

It is well to state here that fractures of the upper and front portions of the chest, combined with fractures of the ribs, received from being struck by a steering wheel or by a bump from a fender or from falling across a beam, are the most serious types of chest injuries, in that the pain is most severe. Shock comes on rapidly and is very seriouus. If, in addition to the above fractures, there is blood in the chest cavity or in the mediastium, the mortality is very high; and, if this condition of the front, upper portion of the chest is combined with additional injuries in the abdomen, the case is almost hopeless from the beginning. Ruptures of the diaphragm occur, but they have not been associated with extensive fractures of the ribs and sternum. The most suggestive symptom of a traumatic rupture of the diaphragm is pain and pressure beneath the sternum and the only diagnostic factor is by means of x-ray.

In looking over a few text books we have been amazed to find that in no instance have these injuries been considered in a group. If trauma were selective and occurred only in a chest, abdomen, or pelvis, there would be no difficulty in the average surgeon's consulting his text books and outlining the treatment. But, when one reads the description of chest injuries in the average text book he finds a very wide discussion of the ecchymotic mask, collapsed lungs, blood in the pleural cavity, and penetrating wounds of the chest. But the chest injury which is combined with abdominal symptoms has been sadly neglected and it is this combination group that we wish to discuss today. We are cognizant that these crushing injuries of the chest may be accompanied by pulmonary collapse, mediastinal emphysema, sub-cutaneous emphysema and an ecchymotic diffusion, due to pressure. But, in addition to these, we find many times that the abdominal wall is rigid and then the task of determining whether this abdominal rigidity is due to the chest injury entirely or to a ruptured organ or viscus immediately becomes paramount.

Let us at this time make a specific statement that the differential diagnosis we are discussing today concerns mainly the first few hours of treatment. There is no adequate time to discuss in detail the many sequential groups of symptoms. It is easy for the average surgeon to understand how an individual, struck and injured in the right side of the body, so that multiple ribs are fractured, may also have a ruptured liver. The extent of this ruptured liver is an extremely variable factor, but the examining surgeon must remember one thing, that a liver can be slightly ruptured, so that it can spill a certain amount of free blood into the peritoneal cavity and yet not need surgical interference. So far we have not encountered a single case in which a ruptured liver has required gauze packing or surgical suture. The reason for this is that when there is an extensive rupture of the great vessels in the liver the haemorrhage is so severe that death is almost immediate. These multiple injuries of the liver, which may at a later period have a localized abscess from a colon or other type of infection, must be understood to occur and must be sought for later on in the course of convalescence. However, these are not to be considered in this paper. To have an associated injury of the right kidney with blood in the urine in an individual with fractured ribs and ruptured liver is not an uncommon occurrence.

Now, under the circumstances, what must the attending surgeon do with an individual suffering the exquisite agony of multiple fractured ribs and fractured sternum, with a rigid abdomen? To this question there is only one answer. The chest must be immobilized at once as well as can be done with adhesive plaster. This plaster should extend 2 inches on either side of the median line. If only the ribs in the upper portion of the chest and sternum are fractured, adhesive plaster immobilization is distinctly contraindicated, because it will be of no value and it may cause harm due to pressure on the vessels, nerves and trachea. This type of case must have the chest immobilized by the use of morphine and the only rule to be considered here is to give an adequate amount of this drug, bearing in mind the basic fact that too large doses of morphine are depressant and relatively small doses stimulant. But one must be sure that an amount adequate to control the pain and suffering is given. With the strapping of the lower portion of the chest and the administration of morphine, the rigidity of the abdomen will decrease to a moderate degree in the great majority of cases where the rigidity is due exclusively to the chest injury. The blood from the ruptured liver will be an irritant and cause some rigidity and tenderness until it is neutralized by the serous fluid from the abdominal cavity; this requires about 48 hours. Just about the same type of reasoning will cover the injuries to the left side of the chest with a rupture of the spleen, although it is far more common to have the spleen continue to bleed following a rupture than it is to have the liver continue to bleed following a partial rupture.

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*Guest speaker address, ebraska State Medical Association, annual meeting, Omaha, May 12-14, 1937.

Unfortunately, however, the injuries to the spleen and the liver are not the only ruptures that occur in the abdominal cavity. We must also consider a rupture of the stomach, of the colon, and of the small bowel, the bladder, kidney and diaphragm. In making a diagnosis of a ruptured stomach it must be ascertained, if possible, when the individual took food or fluid. If the accident is sequential to a heavy meal, one must suspect the ruptured stomach. And what are the symptoms encountered when such a condition exists? The rigidity is intense and the pain in the abdomen is so marked it will almost negate the chest symptoms; the administration of morphine will not decrease the rigidity of this ruptured stomach to any marked extent. If the large bowel is ruptured, (It would be well to add here that this is a rare condition, because the pressure will force both gas and feces out of the anus more frequently than it will rupture the bowel) the contents of the colon are also intensely irritant when spread into the abdominal cavity, although not quite so irritant as the contents of a ruptured stomach, as the acid gastric contents immediately proceed to digest the patient's peritoneum. But, where any one of these three conditions exists, we wish to repeat and to emphasize that morphine in sufficient quantities to quiet and control the pain be given; if not, the patient will die of shock in a very few hours.

Let us suppose that the patient has a rupture of the small bowel. As a rule the contents of the small bowel are not intensely irritant and, if the rupture is not very large, one has time to think carefully concerning the line of treatment to be followed. If in doubt in regard to the small bowel, please be sure to feed very small amounts of soft and highly nutritious food during the first ten days or two weeks following the injury, because, strange as this statement may seem, our group is convinced that we have observed several of this type of small bowel injury, associated with serious injuries to the chest, recover. We must admit, however, that this is a speculation, as it has not been proven by operation or by post mortem. As yet we have not found it necessary in our trauma ward to suture a ruptured spleen. However, this will probably come about in a short while, as we are certainly due to receive a case in which a bleeding spleen will have to be repaired or removed.

Next we consider the question of an injured kidney or bladder. The first thing to be ascertained, if possible, is the length of time that has intervened since the patient passed urine. Many people drive long hours with a full bladder and the rupture of this viscus is a common cause of death. But, we firmly believe that even before we investigate the possibility of a ruptured bladder in this combination of injuries to the chest and abdomen, morphine in sufficient quantities to check the progress of shock must be administered. Then the patient should be catheterized. If he has recently passed his urine and 59 cc. of bloody urine is obtained by catheterization, wait for an hour or more and catheterize again. If there has been a reaccumulation of 50 cc. of fluid, one may rest assured that there has been no rupture in the vault of the bladder, because with the rigid abdominal wall pressing down on the wide fundus all urine excreted into the bladder will be immediately forced into the abdominal cavity. This immediate forcing out of urine will not occur where there is an extraperitoneal rupture of the bladder, but under this latter condition one may delay a few hours without danger. We do not advise the use of air in the bladder for the purpose of making this diagnosis and we do not see the necessity of putting fluids into the bladder to make the diagnosis. Air in a ruptured viscus of this type, with the possibility of gaping veins, is in our opinion contra-indicated. We feel that this is an entirely different condition from a laparotomy, in which the belly is opened, all vessels carefully tied, and the abdominal wall carefully sutured. The advocates of the use of air in the bladder as a diagnostic factor state that it is not a source of danger, but you may rest assured when there is a possibility of gaping vessels in any area the injection of air may cause sudden death from air emboli and, in those hospitals where careful, systematic post mortems have been made following air injections, this has been proven many times.

Now, we come to the point where the bladder is fairly well intact and the possibility of an injured kidney must be considered. An injured kidney, with either small or great fractures, will, as a rule, cease to function upon the reception of that injury. One might try an intravenous pyelogram, but if the kidney on either side does not visualize, under no circumstances make a retrograde catheterization for the deposit of an irritating substance to demonstrate the extent of the injury. This can only do harm and should not be considered, because at the present time we have no knowledge of the regenerative power of the injured human kidney. It has not been our experience that the few hours delay in making a diagnosis of a ruptured bladder in this type of case has been detrimental, but, remember, we are speaking only of the complicated case with extensive chest and abdominal injuries. We are making no statement in relation to the simple rupture of a bladder alone. Obviously, if the bladder alone is injured it should be operated at the earliest possible moment. Later on one may determine the presence or absence of an abscess in the flank, or the subsequent development of pyuria from kidney injury, which would require attention in the lumbar region. But this is out of the 48 hour period which we are discussing today. Should the patient have a crushing injury of the chest, accompanied by a rupture of the stomach or colon, a laparotomy must be done at once.

The choice of the anesthetic must be left to the judgment of the surgeon, but a local anesthetic in the presence of a rigid belly and an injured chest would be our idea of a very serious situation, because eviscerstion would be almost certain to occur. As all of these patients are in an extreme degree of shock, what would occur with a spinal anesthesia I leave to those who advocate this type of anesthesia. Gas with some ether, or ether alone, have served us fairly well, but we do not believe that any anesthetic is entirely satisfactory. The mortality with abdominal operation in this combination of injuries must necessarily be very high and the surgeon must consider every procedure to be undertaken with a careful explanation of the dangers to the relatives or friends.

We will not discuss here the questions of fluids, salt solution, glucose, transfusion, etc. We have only one message and that is that in severe combination injuries involving the chest and abdomen there will be a very high mortality unless morphine is given in quantities sufficient to check the shock by alleviating the pain. This is true in spite of the danger of covering up the abdominal symptoms.

STUDIES ON OMAHA MILK*

II—THE BACTERIAL POPULATION OF MARKET MILK

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In the previous article of this series the bacterial counts of raw milks were listed. The investigation was extended to include milk which was sold on Omaha streets.

The samples from which the following data were obtained were pint bottles of milk. These were purchased from the delivery wagons of various dairies while these vehicles were on their rounds. The samples were packed in ice and taken to the laboratory immediately. Examinations were begun as soon as possible, always within two hours of collection. No discrimination was made in collecting the samples, the bottles being purchased from whichever wagons were available. All samples in a given series were collected on the same day.

Fifty-seven samples were examined. Nineteen of these were collected during August, 1936, and the remainder during March and April, 1937. Raw milks and pasteurized milks were obtained, depending upon which the dairy handled. In a few instances it was possible to purchase both raw milk and pasteurized milk from the same retailers.

METHODS OF INVESTIGATION

Breed counts were made of these samples as in the case of the raw milks discussed in the first article. The vast majority of bacteria seen in these were dead, but the counts were valuable in that they gave some idea, in the pasteurized milks, as to what the bacterial population had been before pasteurization.

The standard plate count, as described in Standard Methods of Milk Analysis, was also done on each sample. These were incubated at body temperature (37.5 degrees Centigrade).

A second set of similar dilution plates were poured and allowed to incubate in the dark at room temperature (20-22 degrees Centigrade). These were employed to count the numbers of organisms capable of multiplying at this lower temperature, thus giving some idea as to the rela-

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*This work was made possible by the Roberts Dairy Research Fellowship.

tive contamination of the milk with air and water bacteria. Since some bacteria can develop quite well at either of the above temperatures, no doubt there is some overlapping in the recorded counts.

A third set of such plates, in one series, were poured with blood agar and incubated at body temperature. This was done to detect the numbers of hemolytic streptococci present. Since some streptococcal diseases are readily transmitted by milk, notably scarlet fever and septic sore throat, the importance of this test is apparent. No attempt was made, however, to determine the pathogenic potentialities of the organisms recovered by this means.

Certain bacteria form spores and in this state are able to pass the pasteurizer without being harmed. The great majority of such organisms are not pathogenic, but their multiplication in the finished product may affect the quality of that product. In order to learn the relative numbers of these organisms, portions of each sample were heated to 80 degrees C. for 15 minutes. This served to destroy all bacteria not in the spore state. Dilution plates were then made of the heated samples in the usual manner and incubated at body temperatures.

Furthermore, there are certain other bacteria which require relatively high temperatures for their development, i.e., the thermophilic bacteria. Non-pathogenic in themselves, they multiply readily at or slightly below the usual pasteurizing temperatures (142°-145° F.) and may occur in pasteurized milk in enormous numbers. To detect these, dilution plates were poured with a special medium and incubated at 55 degrees Centigrade (131° F.).

The presence or absence of members of the Coli-Aerogenes group of intestinal bacteria have long been used to judge the sanitary quality of milk and water, their presence supposedly indicating fecal contamination from human or animal sources. In pasteurized milks their presence or absence indicates, roughly, pasteurizer efficiency. All samples were examined for these organisms.

RESULTS OF INVESTIGATION

The first series of nine samples was collected on August 15, 1936. Five of the samples were pasteurized milk, four were raw milk. The results of the examinations of the pasteurized samples are shown in Table 1. All numbers indicate bacteria per cubic centimeter.

The average standard plate count for the pasteurized milks was about 66,000 per cubic centimeter, while for the organisms developing at room temperature the average was 54,000. An average number of about 200 thermophilic bacteria were present, while the general average for the spore-forming organisms was 500. One sample contained B. coli.

TABLE 1

Series 1—Pasteurized Market Milk

Brand	Standard Plate	20 C. Plate	Thermo-philes	Spore-bearers	Coli-Aerogenes
I.	17,000	19,000	100	800	0
II.	350	900	0	50	0
III.	22,000	33,000	100	1,000	0
IV.	280,000	230,000	300	400	100
V.	2,500	1,500	doubtful	150	0

The raw milk samples of the same series were examined in the same way and the results of the investigation are listed in Table 2.

TABLE 2

Series 1—Raw Market Milk

Brand	Standard Plate	20 C. Plate	Thermo-philes	Spore-bearers	Coli-Aerogenes
A.	23,000	33,000	0	200	1,000
B.	80,000	100,000	500	850	0
C.	400,000	430,000	doubtful	350	100
D.	180,000	150,000	100	200	0

Milk A is raw milk from the same dairy supplying pasteurized milk V in Table 1.

When the standard counts and those made at room temperature of the two groups are compared it is evident that the bacterial population of the raw milk is much more numerous than in the pasteurized milk. The general average for the raw milk standard plate count was 170,000 per cc. while the plate incubated at room temperature showed an average count of 180,000. There was an average of approximately 300 bacteria of the Coli-Aerogenes group per cubic centimeter. The raw milks contained fewer numbers of thermophilic and spore-bearers, on the average, than did the pasteurized milks. Raw Milk D contained 20,000 B. pyocyaneus per cc. The second series of ten milk samples was collected on August 26, 1936. Five of these were pasteurized milks, the rest were raw. Some of these are from dairies listed in the previous tables and are given the same serial numbers and letter they bore before.

The counts of the pasteurized milks are listed in Table 3.

TABLE 3

Series 2—Pasteurized Market Milks

Brand	Breed Counts (millions)	Standard Plate	20 C. Plate	Thermo-philes	Spore-bearers	Coli-Aerogen.
I.	1.22	26,000	50,000	30	1,300	0
II.	0.55	380	250	0	0	0
III.	2.50	35,000	28,000	60	3,700	0
IV.	30.24	300,000	200,000	100	2,000	10
VI.	28.46	450,000	600,000	100	400	10

The average count of pasteurized milk at standard temperature was 165,000, nearly three times that obtained in the previous series. This was also true of the counts obtained at room temperature, the average being 176,000. This latter figure surpasses the average standard plate count obtained in the raw milks of Series 1, and very nearly equals the average count obtained at room temperature in the same group. Thermophiles and members of the Coli- Aerogenes group of bacteria were reduced in numbers, but the latter organisms were not eliminated and occurred in two of the five samples of pasteurized milk. The average count of the spore-bearers roughly tripled that found in the pasteurized milks of the previous series.

The results of the examinations of the raw milks of Series 2 are shown in Table 4.

TABLE 4

Series 2—Raw Market Milk

Brand	Breed Counts (millions)	Standard Plate	20 C. Plate	Thermophiles	Spore-bearers	Coli-Aerogen.
C.	7.09	500,000	450,000	350	110	100
D.	5.30	50,000	80,000	10	200	0
E.	35.40	125,000	50,000	20	450	100
F.	20.20	60,000	250,000	40	250	0
G.	17.25	40,000	30,000	30	2,500	100

The average standard plate count of the raw milks was 160,000 per cc.; at room temperature the average count was 176,000 per cc. The first average is lower than that obtained from the pasteurized milks of this series, while the second matched that obtained in the pasteurized milks. These approach the raw milk figures of the first series, though they are reduced a few thousand. Counts of other bacteria showed a reduction over those obtained in the raw milks of Series 1, except for the counts of spore-bearing bacilli. These rose to an average of 700 per cubic centimeter.

Of significance is the fact that Raw Milk E and Pasteurized Milk VI are from the same distributor. Thus the count (standard) of the pasteurized milk is nearly four times that of the raw milk from the same dairy. In addition it is contaminated with B. Coli, though not as heavily as the raw milk.

Raw Milk D again showed 20,000 B. pyocyaneus per cubic centimeter.

The milks of Series 3 were collected on March 19, 1937. There were ten in all, six being pasteurized, the remainder being raw. The results of the examinations of the pasteurized milks are listed in Table 5.

TABLE 5

Series 3—Pasteurized Market Milks

Brand	Breed Counts (millions)	Standard Plate	20 C. Plate	Thermophiles	Spore-bearers	Coli-Aerogen.
I.	0.02	3,500	700	doubtful	900	0
II.	0.002	700	700	doubtful	0	10
III.	0.030	9,000	1,000	0	1,500	0
IV.	0.090	45,000	20,000	doubtful	500	0
VII.	0.14	11,000	1,000	0	350	0
VIII.	0.06	3,500	13,000	0	1.900	0

There was a very sharp drop in the average figures of these milks. The average for the standard plate counts was 12,000, while that of the counts made at room temperature was lower. The average for the spore-formers was higher than in the summer series, however, reaching 800 per cc. The drop in the Breed counts of this group as compared to previous ones is significant, for it shows that marked improvement of the pasteurized milk accompanied marked improvement in the quality of the milk before pasteurization.

The figures from the raw milks of this series are listed in Table 6.

TABLE 6

Series 3—Raw Market Milks

Brand	Breed Counts (millions)	Standard Plate	20 C. Plate	Thermophiles	Spore-bearers	Coli-Aerogen.
A.	0.024	5,000	7,500	0	100	10
C.	0.64	300,000	60,000	0	2,000	0
G.	0.80	13,000	20,000	0	50	0
H.	0.20	25,000	30,000	20	2,000	10

A survey of this table shows a marked improvement over previous ones, except of Raw Milk C.

The milk samples of Series 4 were collected March 24, 1937. All were subjected to the same examinations as in the previous series. The results for the pasteurized milks are contained in Table 7.

TABLE 7

Series 4—Pasteurized Market Milk

Brand	Breed Counts (millions)	Standard Plate	20 C. Plate	Thermophiles	Spore-bearers	Coli-Aerogen.
I.	0.90	23,000	9,000	0	450	0
II.	0.025	400	3,000	0	100	0
III.	0.80	8,000	800	900	1,500	0
IV.	0.20	80,000	30,000	0	350	0
VI.	5.00	tntc*	200,000	700	250	0
IX.	0.10	10,000	72,000	0	7,000	0

*Too numerous to count.

The average figures for the pasteurized milks listed above are: Standard plate, about 25,000 per cc. (excluding Milk VI); 20 degree plate about 55,000; thermophiles, 600; spore-bearers, 1600, and Coli-Aerogenes, none.

Three raw milks were collected in the same series. The counts of these are listed in Table 8.

TABLE 8

Series 4—Raw Market Milks

Brand	Breed Counts (millions)	Standard Plate	20 C. Plate	Thermophiles	Spore-bearers	Coli-Aerogen.
C.	0.110	16,000	70,000	500	300	0
E.	0.70	30,000	45,000	0	1,000	0
I.	2.00	180,000	500,000	0	5,000	0

Raw Milk E. is from the same dairy as Pasteurized Milk VI.

The average figures for the raw milks are: Standard plate, about 76,000; 20 degree plate, about 220,000; thermophiles, 150; spore-formers, about 2,000, and Coli-Aerogenes, none.

This particular series shows several significant points. The Raw Milk E, coming from the same dairy as Pasteurized Milk VI, has a comparatively low standard plate count. But the pasteurized milk of this dairy contains organisms too numerous to count. This same thing happened in Series 2 in the samples taken in the summer, though the count in pasteurized milk then was not as high as in this series; the summer samples came from the same dairy. The explanation of this is not clear. Since the milk was not dated, there was no way of determining how long it had been stored after pasteurization.

Heavy contamination of both pasteurized milk and raw milks of this series are suggested by the frequency with which the low temperature plate counts surpass those from standard plates.

When blood-agar plates were poured with the raw milks, hemolytic streptococci were discovered in two of the three raw milks. Milk C contained 12,000 per cc., while Milk I contained 200 per cc. None of the pasteurized milks contained streptococci which were active hemolyzers.

The fifth series of ten samples was collected on April 5, 1937. There were six pasteurized milks and four raw ones. The results of the examinations of the pasteurized milks are shown in Table 9.

TABLE 9

Series 5—Pasteurized Market Milks

Brand	Breed Counts (millions)	Standard Plate	20 C. Plate	Thermophiles	Spore-bearers	Coli-Aerogen.
I.	15.00	8,000,000	30,000	80	500	0
II.	3.00	tntc*	tntc*	20	30	0
III.	0.090	50,000	30,000	0	500	10
VIII.	0.20	90,000	12,000	400	600	0
X.	3.030	100,000	tntc*	500	600	0
XI.	8.00	tntc*	tntc*	200	50	0

*Too numerous to count.

Because of the extremely high counts in some of these pasteurized milks, occurring in numbers too large to count accurately, averages cannot be reached. The thermophiles and spore-bearers show little change from former readings. Colon bacilli appear in one pasteurized sample.

The data for the raw milks of Series 5 are listed in Table 10.

TABLE 10

Series 5—Raw Market Milks

Brand	Breed Counts (millions)	Standard Plate	20 C. Plate	Thermophiles	Spore-bearers	Coli-Aerogen.
C.	7.00	tntc*	tntc*	400	20	0
J.	0.085	40,000	15,000	0	80	10
K.	0.150	50,000	9,000	8,000	400	0
L.	0.050	25,000	40,000	40	350	10

*Too numerous to count.

Here again the bacteria were so numerous in some samples that accurate counts could not be made. This series contains the highest thermophile count of the whole group, 8,000 per cubic centimeter. Colon bacilli appear in two of the four samples of raw milk.

The last series of nine milk samples was collected on April 9, 1937. There were four samples of pasteurized milk and six samples of raw milk. The results of the examinations on pasteurized milk are given in Table 11.

TABLE 11

Series 5—Pasteurized Market Milks

Brand	Breed Counts (millions)	Standard Plate	20 C. Plate	Thermophiles	Spore-bearers	Coli-Aerogen.
I.	0.550	150,000	80,000	50	220	0
II.	0.001	200	300	0	0	10
III.	0.40	40,000	30,000	180	550	0
VIII.	0.80	200,000	80,000	400	550	10

The general averages for the pasteurized milks are: Standard plate count, about 98,000; 20 degree C. plate, about 48,000; thermophiles, 175, and spore-formers, about 400. Colon bacilli appeared in two of the four pasteurized samples.

The six samples of raw milk of this series were examined in the same way and the results are shown in Table 12.

TABLE 12

Series 6—Raw Market Milks

Brand	Breed Counts (millions)	Standard Plate	20 C. Plate	Thermophiles	Spore-bearers	Coli-Aerogen.
C.	0.400	100,000	60,000	tntc*	170	10
G.	0.800	200,000	150,000	40,000	5,000	0
M.	0.018	80,000	20,000	3,000	70	1,000
N.	0.100	75,000	60,000	0	800	0
O.	10.000	4,000,000	2,000,000	tntc*	150	0

*Too numerous to count.

The averages for the raw milks are much higher. They are: Standard plate count, about 750,000 per cc.; 20 degree C. plate count, about 390,000; spore-formers, about 1,000. An average for the thermophiles could not be reached, since they occurred in two samples in numbers too numerous to count. Colon bacilli appeared in two of the five raw milk samples, one being heavily contaminated.

SUMMARY

Fifty-seven samples of raw and pasteurized milk were purchased from the delivery wagons of twenty-six dairies during August, 1936, and March and April, 1937.

These were subjected to bacteriological examinations to determine the relative numbers and kinds of bacteria present.

The counts of both pasteurized milks and raw milks showed wide fluctuations between members of the series and between the series.

Averages were set up for the various counts of each series. It should be emphasized, however, that some of these are distorted by very high or very low counts in the groups of counts.

In general the counts of pasteurized milk were lower than those of raw milk of a given series, though not always so. In two instances the pasteurized milk of one dairy had a higher count than the raw milk of the same retailer.

Six, or 18.7%, of the thirty-two samples of pasteurized milk contained members of the Coli-Aerogenes group of intestinal bacilli. Eleven, or 44%, of the twenty-five samples of raw milk contained organisms of this group.

THE CONVALESCENT SERUM CENTER AND ITS VALUE TO THE COMMUNITY*

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Yesterday, as a part of the symposium devoted to maternal and child welfare, I presented some experiences of the Children's Hospital Convalescent Serum Center of Los Angeles under the title, "The Value of Convalescent Serum in the Acute Contagious Diseases."

This presentation had to do principally with the use of convalescent human serum in measles, scarlet fever, poliomyelitis, mumps, whooping-cough, and chickenpox; mention was made also of its use and value in diverse streptococcus conditions. It was urged that convalescent serum centers be established in order to make this valuable therapeutic agent readily available to the community sick, but the problems involved in the establishment and operation of such a serum center were not discussed. The function of such a unit is to make sera of proven value constantly available to the physicians of the community.

At the present time there are not more than seven convalescent serum centers in operation in the United States. There are, however, a few hospitals processing convalescent serum in a small way to supply the needs of their own staff, or for use within the institution.

As convalescent serum is produced from the blood of recent convalescents the amount obtainable is limited; but it is somewhat in excess of the needs of the community from which it is obtained. Therefore, if serum centers were established in the large cities of the various states, they would be able to supply serum to a part of the surrounding country, as well as to their own immediate vicinity, and in this way meet the growing demand for the various convalescent sera. Centers should be located centrally and conducted by either a hospital or a department of health. If operated by a hospital, it may be a part of or apart from the hospital laboratories. A contagious disease hospital or an institution with a contagious unit would be an ideal location for the establishment of a center. If not operated by a hospital caring for contagious diseases, an affiliation with one is desirable.

A center must first of all have a physician director who is familiar with all technical procedures involved in the processing of human blood, as well as thoroughly versed in the knowledge of the indicated uses of human immune serum. There is no reason why the position of physician director of the center may not be assumed by the "Director of Laboratories" of the hospital in which the center is located, or filled by the city or county health officer of the community. In addition, certain technical, secretarial, and diener services are required.

In the construction of the plant, dust-free rooms should be provided in which bottling and other steps in the processing may be accomplished. These rooms should be equipped with air filters so that the atmosphere may be changed daily, preferably after the day's work is completed. They should not be entered by anyone except those who handle the serum during its processing.

The method of serum preparation should conform in all respects to the standards of the "National Institute of Health," and the center should operate under a government license; if so, the product may be sold in interstate commerce and shipped to states adjoining the location of the center.

Names of recently recovered cases of reportable diseases may be obtained from county or city health departments. The name of the physician reporting the case is obtained from the same source, and permission is secured from him by telephone or mail before soliciting his patient for blood. In our work, permission has been secured in many thousand instances without a single refusal. Such cooperation on the part of physicians is ample proof of their sympathy and sanction of this work. After obtaining the physician's permission, the patient is contacted and offered a stated fee for a specified quantity of blood. If he expresses willingness to act as donor, a definite appointment is made for him to appear for the withdrawal of blood.

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In order to secure a serum high in antibody content, bleedings should be made relatively early after recovery. We do not withdraw blood more than four months after the onset of the disease in the case of measles, or more than six months in the case of scarlet fever.

In mumps, whooping-cough and chickenpox, donors are not bled after the end of the first month because in these conditions there is a rather rapid decline of antibodies after this interval.

Multiple bleedings may be made on individual donors provided a total of one hundred cubic centimeters of blood per week is not exceeded.

The presence of fat in any quantity in serum renders it objectionable, especially for intravenous use; therefore, in order to eliminate this factor, only fasting donors are bled.

The removal of the blood is painless and without any ill effect as attested by the bleeding of many hundreds of immune donors. The blood is removed from the donor by means of a sterile specially constructed bleeding set, and the apparatus is then allowed to stand in the refrigerator from 18 to 24 hours, so that a firm clot forms and a maximum yield of serum is obtained. At the end of this time the bleeding assembly is removed from the neck of the centrifuge bottle containing the blood and a sterile rubber cork is inserted. The container is placed in a centrifuge, and centrifuged at moderately high speed for 20 minutes. The serum is then removed by means of an aspirating unit. The few red cells that are drawn over with the serum are packed by a second centrifugalization and the serum is again drawn over into another container. If the glassware used is perfectly dry and there is no interference with the clot during the procedure, hemaglobinazation does not occur. While this method of non-interference with the clot lessens somewhat the amount of serum obtained, it is compensated for by the superior quality of the final product.

All individual bulk bloods are cultured aerobically and anaerobically, and also subjected to a Wassermann and Kahn test. If at the end of a week the tests are all negative, the serum is stored at a temperature approximately two degrees above freezing and held in that state until a demand for it is anticipated.

As the need for serum is indicated, from fifteen to thirty individual bulk bloods are added together in a pool and filtered. After the bulk bloods are pooled, a suitable preservative is added. Much has been written concerning the superiority of many of the recently introduced compounds for this purpose. We have conducted considerable investigative work with most of the now recommended preservatives, and it is our feeling that with everything considered, tricresol is entitled to first choice for this work. We are convinced of its effectiveness and see no disadvantages in its use. The preservative, after being dissolved in equal parts of ether, is added to the pooled serum which is then shaken for several minutes to insure its even distribution.

Filtration is now carried out in the serum room under a glass hood which is constructed so that it admits only the hands of the worker. A sliding glass front which can be raised or lowered makes this performance possible. The filtered pool is transfered to final containers of a suitable size. Cultures of the pool are made, as well as of a definite number of the final containers per each one hundred bottles; and all are observed for a period of seven days. If at the end of this period all cultures are negative the serum is labeled and dispensed as needed. Return cards should accompany each dose of serum so that the physician may record the therapeutic efficiency of the product, and return them for subsequent statistical study, if desired.

The greatest caution possible must be exercised in the control of sterilization of all equipment used; therefore graphic temperature records of each sterilization should be obtained. All procedures having to do with the filtered product should be conducted under the glass hood in the dust-free room by trained bacteriologists who wear caps, masks, sterile gowns and gloves, and observe at all times the most approved operating room technique.

Due to the expense of human blood and salaries paid such trained workers, the cost of human convalescent serum is somewhat in excess of a like quantity of diphtheria or tetanus antitoxin; however, the number of cases of scarlet fever and of diverse streptococcus infections, as attested by personal observations, who within a few hours after treatment with convalescent serum show temperature drops of four to five degrees, coupled with an almost dramatic reduction in toxemia, and a rapid transformation from seriously ill patients to individuals showing every evidence of recovery, gives full justification for the production and use of this exceptionally valuable therapeutic agent.

I have in mind a large contagious unit which uses as many as one hundred doses of scarlet fever serum per month, and thereby saves in hospital days per patient, more than enough to pay for the serum. This saving is accomplished not only because serum brings about a more rapid recovery of the uncomplicated case of scarlet fever, but because it reduces the incidence of complications approximately 50%.

In families where serum is used for prophylaxis, the incidence of contact scarlet fever is reduced almost to the vanishing point; whereas in adults and children of families not so protected a very high percentage of contact scarlet fever occurs. In Los Angeles, last year, this contact infection was almost 20%. The prevention of such a percentage of scarlet fever would be a decided gain to the family and the community, as well as a great comfort to the attending physician. In the report of Hoyne, Thalhimer, and Levinson there were 730 families in which scarlet fever was transmitted from the primary cases to contacts in the home. Since the number of contact cases in their series totaled 1,041, this means that every primary case of scarlet fever in the home was responsible for 1.4 secondary cases. These secondary cases might have been prevented had convalescent serum been used promptly on discovery of the primary cases. A prophylactic agent capable of reducing the incidence of illness to this degree commends itself to the serious consideration of physicians, health officers, patients, and the community.

References made to scarlet fever serum apply equally to measles serum. The high death rate of measles in the ill, very young, or sub-normal child demands that the physician, if possible, protect this individual from an attack of measles.

Dr. Schick said very recently in speaking of tuberculosis "You should use every measure at your command to protect the tuberculous child from measles." This protection in the case of measles and scarlet fever is more surely accomplished by the use of convalescent serum than by other recommended products. In 1928 Dopter said that France should take immediate steps to furnish convalescent measles serum to all of France.

It is felt that medical centers should take immediate steps towards the establishment of serum centers for processing and distributing the various convalescent sera known to be valuable. The incidence of scarlet fever in this city (Omaha) last year would have served as an abundant source for immune blood to protect contacts and treat expected cases. Blood may be obtained other than by purchase; many individuals in Los Angeles County have voluntarily donated blood as a civic duty and serum obtained from this source is ear-marked and donated to the needy sick. In the contagious disease hospital, patients with scarlet fever may be advised of the value of convalescent serum in the treatment of their case, and given serum with the understanding that on the day of discharge they are expected to make a donation of blood as pay for the serum used in treatment. I am aware of such an arrangement as this being followed by two serum centers, and acceptance of the offer by the patient is the general rule. As the serum obtained from the bleeding of one patient is in excess of the amount used in treatment of the average case, a considerable stock may be built up by following this method.

Leaving for the moment the part the serum center plays in making serum of proven value available, I have in mind a function it should play in contributing to the treatment of septicemias. The term septicemia implies the finding of bacteria in the blood stream. Many conditions heretofore not considered as septicemias have been shown by refined methods of blood culture to show at certain times the presence of bacteria in the blood stream. A favorite form of treatment used by many physicians in cases of septicemia and obscure infections, is the administration of transfused blood. The transfusion is generally given not because the patient needs blood as such, but because he needs the immune substances contained in the transfused blood. It has been observed many times that patients with septicemias show a slight increase in the complement content of their blood at the onset of their illness. The amount of complement decreases as the infection progresses and with recovery gradually returns to normal. In the severe cases the complement continues to decrease and many severely ill patients show a complete absence of complement. Most of the patients dying with septicemia show a greatly decreased or a total absence of complement in their blood. It would seem therefore that complement contributes a very important immunological factor in combating infection. Many physicians reluctantly transfuse a sick case for the reason that the added volume of blood may seriously interfere with an already overburdened and damaged heart muscle. This difficulty is met to some extent by repeated small transfusions rather than one large one. It has been shown by Cadham and others that patients transfused with large or moderate amounts of whole blood suffer a severe loss of complement. As this loss not only does not follow, but complement actually is increased, when serum alone is transfused, the decrease in complement following whole blood transfusions must be assumed to be due to the cellular portion of the transfused blood. Moreover, it has actually been shown that transfused serum stimulates the production of complement in the patient. Complement titers taken following serum transfusion become higher than could be accounted for by the complement contained in the transfused serum, so we must infer that the added amount is produced by the patient himself due to the stimulating action of complement contained in the transfused serum.

If blood cells interfere with the production of complement and blood serum stimulates its production, why not transfuse serum rather than whole blood? Serum transfusions cut down the total volume to be transfused by one-half, thereby saving the additional heart load. Complement for this purpose could be produced by a serum center on a few hours notice. This to my mind, is a very important function to fulfill in any community.

Serum transfusions are also very valuable in the edemas of nephritis and lipoid nephrosis. It has been repeatedly observed that cases with edema and low plasma proteins are markedly benefited by serum transfusions.

I have been particularly impressed by the work of Cadham, in septicemias. He stated in 1928 that "If there is a definite failure of the body tissues to organize the required immunity it would appear logical, if possible, to supply that immunity in passive form." With this in mind he began immunizing rabbits with large doses of vaccine made with organisms obtained from blood cultures, and noted that a high immunity was developed in his animals. He keeps a colony of rabbits immune to as many as 300 strains of organisms. When these hyperimmune animals are subsequently injected with an organism obtained from the blood culture of a patient having septicemia, a great outpouring of antibodies are noted in the blood of the immune animals. They are bled the day following injection, and a few cc. of this hyperimmune serum combined with 20 to 30 cc. of fresh complement is administered to the patient, ill of septicemia. In 1934 this author reported 100 cases of septicemia, all with positive blood cultures treated in this manner with a mortality rate of 15%. If we exclude from this series five cases of sub-acute bacterial endocarditis all of which died, we note his mortality rate was 10.5% for these unselected cases. Prior to the time covered by his report, Cadham noted that the mortality rate in this condition in the same city was 85%. In a recent correspondence, Dr. Cadham states that he is having the same continued success with this type of therapy as previously reported. His low death rate is probably not a coincidence and this type of serum should be made available to all similar cases in a given community. The serum center is the agency we expect to carry on this work.

The product known as lyophile serum has been recently introduced for use by Doctors Flosdorf and Mudd, of the University of Pennsylvania. This type of serum is simply a serum from which all but a small residual of water has been removed, and consists of a dry porous powder occupying essentially the same volume as did the liquid serum before drying.

The process consists of dehydration at low temperature which is attained by freezing the serum in the final container by means of dry ice. In this way a temperature of approximately —78 degrees C. is attained. After the serum is frozen, the container is attached by means of a glass side arm to a manifold system from which all air possible is removed by a vacuum pump. At this low pressure, evaporation proceeds from the frozen surface, and the water vapor, which is removed, is refrozen and trapped as ice in an attached condenser. The heat loss due to evaporation keeps the serum frozen, and at the end of about 22 hours, depending somewhat upon the capacity of the container, the immune serum is reduced to a porous solid containing approximately 0.5% moisture. The container of lyophile serum is then detached from the manifold by means of a gas-oxygen flame which seals off the glass side arm and preserves the vacuum. The product is stored in this state.

At the time of use the physician has only to add the amount of water previously removed to restore the serum to its original state. Virtually all of the serum dispensed by the Philadelphia Serum Exchange has been of this type.

Dried serum has many advantages over liquid serum; one being its superior keeping qualities. In liquid serum, complement is very unstable and remains active only a few days; whereas in dried serum, complement shows no loss of potency for at least nine months. Liquid serum also has a tendency to become cloudy after a few months storage; and when this change in appearance occurs, the serum becomes less desirable. The superior keeping qualities of dried serum make it possible for the serum center to harvest a large quantity of serum during epidemics of measles, scarlet fever, and poliomyelitis, and retain it in lyophile form for use in the next epidemic. In this way the early cases of an epidemic are not deprived of serum treatment. Lyophile serum may be restored to the liquid state with as little as 25% of the original volume of water, thus affording a highly concentrated serum which is particularly desirable for use in infants and small children when maximum dosages of serum are indicated.

Dried serum prepared in the usual manner is suitable only for intramuscular use due to the fact that small globules of fat are aggregated by the freezing process. There is danger that these larger globules of fat might act as capillary emboli and thereby deprive vital centers of their blood supply. However, dried serum may be prepared for intravenous use by what is known as double processing. In following this method the fats are aggregated by a preliminary freezing and dehydration. The dried serum is then restored by the addition of water and filtered through a medium pore filter; the serum is again frozen, dehydrated, restored, and filtered this time through a fine pore filter before its introduction into the final containers for the last dehydration. The resulting product is free of fat and suitable for intravenous use.

Dried complement is now being offered for sale by a leading biological house for use in the Wasserman test; and it is the belief in some quarters that the antitoxins and serums supplied by biological houses, will be in the dried form in the near future.

Breast milk also can be dried on the lyophile apparatus, and stored for an indefinite length of time, or until a demand for its use arises. The dehydration is accomplished in a standard nursing bottle fitted to the manifold and containing any quantity desired. To restore it to its original state it is only necessary to remove the vacuum seal, add the amount of water previously removed, and attach the rubber nipple.

Physicians unable to secure convalescent serum may use adult whole blood, or individually prepared serum. Whole blood will protect individuals susceptible to measles, the disadvantage being the large quantities that must be used. A recently recovered case of measles or scarlet fever may act as a donor for the physician and furnish blood or serum for the prevention or modification of measles, or for the immunization and treatment of the scarlet fever contact and established case. If desired any careful laboratory worker may separate the serum from a donor's blood for the needs of an individual physician. This last suggestion is made so that a physician interested in this type of therapy, and not within a reasonable distance of a central source of supply, may still obtain for his patients the valuable substances found only in the blood of recently recovered cases of the various diseases in which convalescent serum is of proven value.

Many physicians of my acquaintance who are unable to secure serum from any other source follow the methods just outlined with success and satisfaction to their patients.

The value of the serum center to the community is evident when we consider its many activities. The principal function, of course, is the supply of convalescent sera for the prevention and treatment of certain contagious diseases. With serum, we may protect the infant and the already sick child who undergo exposure to measles, and control outbreaks of the disease in hospital wards and institutions, thereby saving many lives. We may modify the attack of measles in older healthy children and reduce its accompanying complications to a minimum.

To scarlet fever cases we are able to offer a superior type of treatment and assure them of a greatly lowered incidence of complications, as well as, a favorable therapeutic response. We may assure the scarlet fever contact or the parents of an exposed child, that administration of this harmless human serum will confer protection in almost 100% of cases.

The serum center will also serve as a constant source of supply of convalescent poliomyelitis serum for the isolated case occurring between epidemics. As it now exists this case must await the shipment of serum from some center perhaps several hundred miles distant.

It will make readily available serum for the immunization of mumps and whooping cough contacts, and in this connection, offers promise of considerable value.

Since convalescent serum is an homologous serum, the question of reactions and sensitization following its use may be entirely disregarded. One need have no fear of any serum reactions or sensitization such as follow the use of horse serum. The administration of many thousand doses of convalescent serum without reaction to patients of all ages, from the first days of life to old age, by both the intravenous and intramuscular routes, is in itself sufficient to commend its use.

In addition to supplying various convalescent sera, a serum center located in a community will make available to all physicians in the district complement-containing human serum which has many valuable uses, and hyperimmune rabbit serum which seems to offer so much promise in the treatment of septicemias.

For the above and other reasons, I commend to you "The Serum Center" for its great value to the community sick.

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STUDIES IN PERITONEAL IMMUNITY*

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Peritoneal immunization is a fairly recent advance in clinical medicine. The experimental work which serves as the basis for the various clinical practices of immunizing the peritoneal cavity against infection has been done within the past decade.

Goldblatt and Steinberg found that small repeated intraperitoneal injections of a culture of B. coli would produce immunity against a subsequent lethal intraperitoneal injection of the same organism. Herrmann produced similar findings with a killed mixed culture of the streptococcus viridans and the colon bacillus. Both of these experimental results have found clinical application.

My experimental work showed that intraperitoneal immunity can be produced by the use of various innocuous non-specific substances and cast doubt on the specificity of the local immunity produced by the various vaccines. It also showed that this intraperitoneal immunity is dependent upon or associated with the presence of macrophage cells in the peritoneal fluid and omenta of the protected animals. The degree of immunity seemed to be proportional to the quantitative presence of these cells.

Since my report of this work, other investigators have made similar findings, both clinically and experimentally. Several writers have expressed the belief that local peritoneal immunity is non-specific in type regardless of the activating agent and some have stated that non-specific substances work equally as well if not better in producing such an immunity.

Young and Marks have made clinical application of non-specific peritoneal immunization by the use of amniotic fluid concentrate preoperatively.

Rixford found at varying intervals after the intraperitoneal injection of vaccine (Bargen) in man that the total cell count and the percentage of polymorphonuclear cells were greatly increased but that the smoothness of the convalescence was proportional to the total number of histiocytes present.

In comparing mixed vaccine (Bargen), sodium ricinoleate and amniotic fluid concentrate, Seeley, Higgins and Mann found the greatest response by the mononuclear cells was produced by sodium ricinoleate, about 72 hours after its peritoneal injection and the next greatest response was by amniotic fluid concentrate after 168 hours. Corwin found the true quantitative cellular response to the intraperitoneal injection of sodium ricinoleate to be nearly twice that to Bargen's vaccine (intraperitoneal). He concluded that any of a large number of so-called specific or non-specific substances should prove equally effective in producing a local peritoneal immunity, that one to three days preoperatively seemed the optimum time for the injection, and that the induced immunity was dependent upon the presence of histiocytes.

A review of the earlier literature shows that these experimental findings are not new but that similar reports were made several years ago, although no substantial clinical application was made from them.

Issaeff in 1894 found an increased intraperitoneal resistance against the cholera vibrio following the injection of various non-specific substances. In 1897 Durham reported on the intraperitoneal cellular response in animals to the injection of various organisms. Similar findings were reported by Witts following the injection of weak silver nitrate solution and were essentially a local leucocytosis; first by the polymorphonuclear cells and after about 15 hours by the mononuclear forms.

Salieri and Mickulicz found an increased intraperitoneal resistance against the colon bacillus following a preliminary injection of normal salt solution and killed culture of B. coli respectively. Buxton and Tracy in 1907 reported a decreased systemic invasion of bacteria from the peritoneal cavity when the animal had received an intraperitoneal injection of yeast nuclein 24 hours previously.

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In 1927 Johnson suggested the use of amniotic fluid concentrate at the time of operation to reduce the incidence or extent of postoperative adhesions and peritonitis.

Surgeons have recognized for years, the importance played by the great omentum in combatting intra-abdominal inflammatory processes. That the omentum will migrate to an area of inflammation and attempt to keep it localized by walling it off is common knowledge. The other defensive responses on the part of the omentum are not generally known. Experimentally it has been shown that there is a definite cellular response in the omentum to intra-abdominal invasion by bacteria.

It is my purpose at this time to describe the response of the omental tissue of man to intraperitoneal infection or irritation. Recently I have studied stained sections of omenta from patients who have had preoperative intraperitoneal injections and from patients in whom acute and subacute intra-abdominal inflammatory reaction was found at operation. In this study the intraperitoneal injections were made with amniotic fluid concentrate (amfetin) 48 hours prior to colon surgery. The cases of intra-abdominal inflammatory disease were divided between acute appendicitis, subacute cholecystitis, subacute salpingitis, ruptured ectopic pregnancy and evisceration of abdominal contents.

These omenta on gross inspection vary in color from slight pinkish tint to light red and are a common finding in an acute or subacute abdominal condition.

On microscopic section these omenta show dilatation and engorgement of the capillaries, commensurate with the amount of inflammatory reaction as evidenced by color. Around the capillaries and in the connective tissue meshwork are varying numbers and proportions of polymorphonuclear leucocytes and mononuclear cells. This number and proportion vary with the severity and duration of the intraperitoneal irritation. In the cases in which the infection or irritation has been of short duration, the predominant cell is found to be the polymorphonuclear neutrophile. Where the process is of longer duration, there is a shift in favor of the monocytes. No attempt has been made to classify these monocytes but following the usage of Witts the term macrophage might well be used to include all cells which have been variously designated as histiocytes, clasmatocytes, etc.

All writers on the subject of peritoneal immunity seem to agree on the point that this defense is dependent upon a local leucocytosis but opinion seems divided as to the relative importance of the polymorphonuclear cell and the mononuclear cell in the defense mechanism. A fairly constant finding in favor of the monocyte as the more important cell in peritoneal defense is the corresponding interval of time required for establishment of immunity and mobilization of the macrophage cells. This latter type of cell has also been shown to possess greater phagocytic power. It has also been shown experimentally that the presence of enormous numbers of polymorphonuclear leucocytes alone will not successfully combat extensive intraperitoneal infection.

The mode of entry of the macrophage cells into the peritoneal cavity offers an interesting speculative study. In the omentum they are seen grouped around and in very close proximity to the capillaries. This same observation has been made in sections of peritoneum from immunized animals. In clinical cases of acute suppurative appendicitis, it is possible to find a perivascular grouping of cells in the omentum before they appear in increased numbers in the peritoneal fluid.

The work of Higgins and Bain suggests the possibility of lymphatics or similar channels adjacent to the capillaries of the omentum. Since histiocytes are seen to first increase in these areas, it is quite possible that they have their origin from these perivascular areas, the cells of which may belong to the reticulo-endothelial system.

Intraperitoneal immunity is always a variable quantity and its adequacy in protecting the organism against the invasion of pathogenic organisms will be determined in any given case by balancing the strength of the local defense mechanism against the magnitude of the invading infection.

Bargen states that his method of preoperative intraperitoneal vaccination will not always prevent peritonitis where gross soiling occurs but it does help to mobilize the defensive forces. Even where the defensive forces respond to an appreciable extent, they may still prove inadequate to overcome a massive infection.

I wish to present findings on one case in point. A male patient with gross soiling of his peritoneal cavity with feces from a traumatic rupture of the rectum died on the fourth postoperative day as a result of toxemia from an extensive generalized peritonitis. From autopsy findings the peritoneal fluid showed a high concentration of leucocytes, about 20 per cent of which were mononuclear and the omentum was fairly heavily infiltrated with monocytes. Bacteria could not be seen in the smear of peritoneal fluid. This seemingly adequate natural defense reaction apparently was mobilized too slowly and too late to prevent a fatal termination. In preoperative immunization, it is no doubt the mobilization of the defensive forces in advance of the invading infection, which prevents or minimizes the postoperative peritonitis.

A markedly inflamed intra-abdominal organ may be the exciting factor in calling out the defensive forces against any possible subsequent infection. In acute gangrenous appendicitis prior to perforation one may find the peritoneal fluid loaded with monocytes. In acute and subacute intra-abdominal inflammatory conditions the omentum will be found to contain an increased number of leukocytes as previously stated.

This localization of cells, especially the monocytes, is apparently the outstanding factor in intraperitoneal defense against infection.

COMMON INTRANASAL AND SINUS PATHOLOGY*

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Prior to fifty years ago, knowledge of the nose and paranasal sinuses was very meagre. Some text books on the practice of medicine published at this time made no mention of diseases of the nose or sinuses. The only operative procedures of any consequence which had been performed were for the removal of polypi. For some reason or other, knowledge of the nose and sinuses has not been disseminated as freely and generally as that of many other branches of medicine. Consequently we find today a large percentage of the people full of suspicion in regard to any procedure of a surgical nature either in the nose or sinuses. Many patients carry a fear that if they have a surgical operation performed on the nose or sinuses, that they will necessarily have a succession of them, because of the first operation. The general practitioner or family physician is in a better position to give information of an authentic nature to his patients than any one else. It is, therefore, quite as important for a physician to be able to diagnose pathology of the nose or sinuses as that of any other part of the body because he is usually the first one to be consulted.

A review of the anatomy(1) of the nose and sinuses may be helpful in discussing the pathological conditions. The nose may be described as consisting of two chambers surrounded by bone and extending from the base of the cranium above to the roof of the mouth below. They are separated from each other in the midline by the nasal septum. They open posteriorly into the pharynx through the posterior nares and open anteriorly on the face through the anterior nares. The roof of the nasal chambers is formed by the nasal bones and spine of the frontal bone anteriorly, the cribiform plate of the ethmoid in the middle and the body of the sphenoid, ala of the vomer and the sphenoidal processes of the palate bones posteriorly. The floor of the nasal chambers is formed by the palatal processes of the maxillae and the horizontal processes of the palate bones. The median wall of the nasal chambers is formed by the nasal septum. This septum is formed by portions of several bones and the triangular cartilage. The lateral wall is formed by portions of the lachrymal, maxillary, ethmoid, palate, sphenoid and inferior turbinate bones and the ala nasi cartilage.

The turbinate bodies, three in number, are on the lateral wall of the nasal chambers. They are designated inferior, middle and superior turbinates. The inferior turbinate is an independent bone. The middle and superior turbinates are a part of the ethmoid. The spaces below the turbinates are designated meati, thus we have formed the inferior, middle and superior meati. That portion of the nasal chambers between the anterior nares and anteriorly to a perpendicular line drawn through the anterior border of the inferior turbinate is known as the vestibule. All the rest of the nose, including the sinuses except the olfactory portion, is called the respiratory portion.

The nasal chambers communicate with the four sinuses—maxillary, frontal, ethmoid cells and sphenoidal—through the ostia of the sinuses. The paranasal sinuses(2) have their origin from the third to the fourth month of fetal life, as evaginations of the mucous membrane of the then rudimentary nasal meati. The sphenoid sinus is an exception as it arises as a constriction of the posterior and superior part of the nasal fossa. The early mucous membrane sacs wander into related bones of the nasal walls and by growth of the sacs and absorption of bone make large portions of the ethmoid, frontal, maxillary and sphenoidal bone in the formation of the ethmoid cells, maxillary and sphenoidal sinuses. Although many of the sinuses grow far from the original point of the evagination, the primary points of outgrowth remain in the adult, as the ostia or apertures of communication between the nasal fossae and the sinuses.

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The maxillary sinus is located in the maxilla and roughly follows the shape of this bone. The size on the average is between three and four centimeters in all directions. The ostium of the maxillary sinus is in the ethmoidal infundibulum. As the ostium is placed at the extreme upper part of the sinus, this sinus is unable to drain by gravity. Very often several teeth are in direct relation to the floor of the maxillary sinus.

The frontal sinuses are between the outer and inner tables of the frontal bone. They vary greatly in size and shape and are occasionally multiple. The ostium of the frontal sinus opens into the middle meatus by one of several routes and its relation to the ostium of the maxillary sinus is such that it is possible for infectious material from the frontal sinus or the anterior ethmoid cells to drain directly into the maxillary sinus.

The sphenoidal sinuses are in the body of the sphenoid bone and are separated by a septum. They vary greatly in size in different individuals but have an average capacity of 7½ c.c. The sphenoidal sinus is in close relation to very important structures. Laterally is the cavernous sinus with the internal cartoid artery and the abducens nerve coursing through it. The oculomotor, trochlear, maxillary and ophthalmic nerves are in its lateral wall. At the upper outer angle is the optic nerve. The floor of the sphenoidal sinus contains the vidian nerve and vessels and in the roof the hypophysis cerebri with the optic chiasma over it. The ostium of the sphenoid sinus is placed high so that the sphenoid sinus does not drain readily.

The ethmoid cells form the lateral masses of the ethmoid bone and collectively form the paired ethmoid labyrinths. They are located between the upper part of the nasal fossae and the orbits. The number of cells which compose each labyrinth varies from three to fifteen. The ethmoid cells are divided into two groups, the anterior and posterior ethmoid cells. The anterior group communicate with the middle meatus. The posterior group have their ostia above the middle turbinate. Some ethmoid cells drain by gravity, but some do not have their ostia in a dependent position. The ethmoid labyrinth is intimately related to the orbit, being separated only by the thin orbital plate. Ethmoidal veins pass to the cranial cavity and meninges. The cavernous sinus is in close relation by way the ophthalmic vein.

Thus it is noted that the frontal sinus, maxillary sinus and the anterior ethmoid cells all open into the ethmoid infundibulum through their natural ostia. The anterior border of the middle turbinate being directly over the infundibulum, any hypertrophy or other enlargement of the middle turbinate will mechanically block the drainage and ventilation of the sinuses mentioned and predispose them to disease.

The nasal chambers and sinuses are lined with mucous membrane. The mucous membrane of the nasal chambers is continuous with the mucous membrane of the sinuses. The mucous membrane of the vestibule has a stratified squamous epithelium and is continuous with the skin of the upper lip and wings of the nose. The respiratory portion of the nasal chamber is lined with mucous membrane of the stratified ciliated columnar type. The olfactory portion of the nose occupies about the upper one-third of the nasal chambers, just below the cribiform plate and extends downward both on the septum and the superior and middle turbinates. This olfactory epithelium is of the stratified columnar type but not ciliated. The epithelium of this portion has a slightly different color than the respiratory epithelium, it being slightly yellow colored.

The mucous membrane lining the sinuses is normally very thin. The respiratory mucous membrane of the nasal chambers show several areas of marked thickening. The areas are most pronounced over the inferior turbinates and the lower margin and posterior end of the middle turbinates. This thickening is due to well developed venous plexuses and are known as swell bodies, or the erectile tissue of the nose. The mucous membrane of the nose is rich with glands, having sebaceous and sweat glands in the vestibule and mixed seromucous glands in the respiratory portion. The sinus mucous membrane is not so rich in glands, the glands being found mostly around the ostia of the sinuses. The olfactory region has serous glands.

The blood supply of the nose is very rich and is by the anterior and posterior ethmoid arteries from the ophthalmic, the sphenopalatine from the internal maxillary and the alveolar branch of the internal maxillary. These vessels anastomose freely and form a network giving a very adequate supply to all parts of the nose and sinuses. The venous supply is a little more complicated. Some of the veins accompany the sphenopalatine artery, others accompany the ethmoidal arteries and join the ophthalmic vein. Some empty into the facial vein and a few pass into the interior of the skull, through the foramina of the cribiform plate. The diversified distribution of the veins may explain why infections of the nose and sinuses produce complications intracranially and about the orbit.

The nerve supply is rather complex and is derived from the olfactory, branches from the superior maxillary, vidian, nasal palatine, descending anterior palatine, Meckel's ganglion, and vasomotor branches. The olfactory nerve is the first cranial nerve and the nerve of smell. Its processes pass through the cribiform plate and are distributed to the special olfactory cells in the olfactory area.

The nose is an organ of several functions which are usually described as olfactory, respiratory, phonatory and the ventilator of the accessory sinuses and eustachian tubes. In some lower animals the sense of smell is very highly developed. In man it is limited to the detection of various odors and aids in the sense of taste. In order for the sense of smell to be keen in an individual, it requires that the olfactory region be easily accessible to inspired air. When there is a nasal obstruction or any other condition which produces a congestion or inflammation of the olfactory area, the sense of smell may be lost temporarily. Long continued pathology in the olfactory area may lead to a permanent loss of smell, anosmia.

The respiratory function of the nose is the one in which we are primarily interested in this discussion. The nasal mucosa has a multiple duty to perform in altering inspired air so that when it reaches the pharynx, it will be in proper condition to enter the larynx, trachea and bronchi where it will produce a minimum of irritation. This may require the air to be cooled or warmed, depending on the season, it may require additional moisture or it may need to be filtered.

When cold air is inspired, the venous plexuses are engorged and the turbinates enlarge, tending to diminish the space of the nasal chambers so that the air may be warmed more effectively. When the nose is functioning properly, that is no obstruction or edema of the inferior or middle turbinates, the air is warmed quite effectively before it reaches the pharynx. When the nose is obstructed and cold air passes directly to the pharynx, as in mouth breathing, the mucous membrane of the pharynx becomes engorged, the lymph follicles enlarge and we have a pharyngitis. The nose attempts to cool air that above body temperature, but this process can not be done as efficiently as warming.

One of the most important functions of the nasal mucous membrane is to supply moisture to the inspired air. According to Coakley(4), the nose supplies twelve to eighteen ounces of moisture in twenty-four hours. The moisture supplied is supposed to be derived from the physiological reaction occurring in the erectile tissue of the turbinates, according to Hansel. Others have contended that the moisture is derived from serous glands.

The question of the filtration of the inspired air is a rather important one. According to Proetz(5), air currents extend through the middle and upper meati in both inspiration and ex piration. The turbinates break up the column of inspired air, so that most of the air comes in contact with some part of the mucous membrane. Foreign material, dust and bacteria are thus deposited on the mucous membrane. The mucous membrane having a thin layer of mucous, which is spread over its entire extent including the sinuses, is particularly adapted to the task of retaining foreign particles which come in contact with it. According to the experiments and observations of Lucas(6), the cilia of the mucous membrane are in constant motion, having as their ultimate goal the nasopharynx. The cilia, however, do not direct the mucous stream to the nasopharynx by the most direct route. The cilia tend to move the material from the narrow parts of the nasal fossa toward the larger cavities. At times the movement may be at right angles to the ultimate destination. Nor does the ciliary movement have any direct relation to gravity, for the flow may be upward or downward or any other angle in relation to gravity. The direction of air currents in respiration also has no bearing on the direction of ciliary action. The cilia of the sinuses have a motion in the general direction of their ostia. This makes it necessary for the cilia of the maxillary and sphenoidal sinuses to work in an upward direction in order to eject mucous or other material through their natural ostia. Hilding measured the average rate of flow by ciliary action, and found it to be 4 to 6 milimeters per minute and that it required from four to ten minutes for foreign matter to travel the distance of the active ciliary area. He found the meati to be the most active area and the direction of ciliary action to be from the more inactive areas toward the active ones. Arnold, Ostrom and Singer(8) noted that when bacteria were sprayed into the nose they were swept away very quickly and completely within a few minutes from the active areas. For this reason the deeper portions of the nose between the septum and the turbinates ordinarily yield sterile cultures. Lucas also observed that the mucous sheet of the nose consists of two layers, one which rests on the top of the cilia and whose action has been described, and another inner layer of low viscosity which forms a medium for the vibrating cilia. It can readily be deducted that because the normal flow of secretions of the nose is toward the nasopharynx, the act of blowing the nose and forcing secretions in the opposite direction is not physiological.

The mucous coat of the nasal mucous membrane together with the ciliary action is considered the defense mechanism of the nose in protecting it from irritating substances, bacteria or allergens. Any agent, therefore, which destroys the continuity of the mucous coat or which inhibits the action of the cilia, renders the mucous membrane more susceptible to infections and allergens. A great deal of experimental work has been done to determine which drugs or physical agents have a detrimental effect on the mucous membrane. It has been noted that anions such as citrate, oxalate, tartrate, and sulphate stop ciliary action in a relatively short time. Gray(9) demonstrated that calcium is necessary for ciliary action and that any substance which has an affinity for calcium inhibits ciliary action. Lierle and Moore(10) studied the effects of drugs, commonly used, on ciliary activity of the upper respiratory tract. Tap and distilled water caused a slowing of the cilia. Three per cent ephedrine hydrochloride was not harmful. Mild silver protein concentration of 5, 10 and 20% solutions produced a slowing of the cilia. Solutions of 1% eucalyptol and .5% thymol, 1-1000 solution of epinephrine, 2% zinc sulphate and 2% mercurochrome were definitely harmful. A .5% silver nitrate solution is immediately and permanently fatal to ciliary activity. Proetz deducted that it is improbable that bacteria penetrate a normal mucous membrane, but that they gain entrance after the mucous membrane has been disabled. From these experiments it would appear that washing or irrigating the nose or sinuses or the application of many commonly used medicants tends to disable the normal activity of the cilia and destroy the natural defense mechanism of the cells and render them more susceptible to infection or the action of allergens.

In describing abnormal conditions which frequently occur in the nose, deflections and other abnormalities of the nasal septum play a very prominent part. Septal defects are undoubtedly the primary cause of much of the pathology which occurs in the nose and sinuses. The ideal septum is one which is straight and thin and which divides the nose into two equal and symmetrical halves. Irregularities of form and thickness, however, are only considered harmful when they interfere with the normal functions of the nose. The causes of septal deformities are usually developmental or traumatic. These deformities may occur early in life. Mouth breathing produces a high arched palate which in curving upward exerts a pressure on the septum. The septum early being composed largely of cartilage, is easily bent. Growth of the septum, in any direction other than straight, having begun the deformity will continue and become increasingly exaggerated. Uneven ossification of the early bone probably leads to deflections.

By far the greater number of septal deviations and deformities are caused by trauma. The bridge of the nose being an arch is subject to more or less flexibility. Any blow of sufficient force to cause a movement of the bridge of the nose will be transmitted to the septum. The septum being fixed below by the comparatively strong maxillary and palate bones, will either bend, break or be dislocated. Having been traumatised, the septum usually develops a deflection or spur slowly. After a broken nose that has been reduced perfectly, it is not unusual several years later to find that the septum has a marked deflection or spur. Thickenings of the septum, even when the septum is perfectly straight, cause trouble by impinging on the turbinates. The turbinate is then gradually pushed closer to the lateral wall and the drainage and ventilation of the sinuses may be seriously interfered with. Deflections and spurs of the septum alter the course of air currents and seriously interfere with the respiratory function of the nose in warming the air, humidifying it or properly filtering out foreign material, bacteria or allergens. Any interference with the normal respiratory function may lead to changes of the mucous membrane. These may be manifested by congestion, edema or hypersecretion. An abnormal mucous membrane has its defense mechanism impaired and more readily yields to the inroads of infection and allergens. If the mucous membrane of the nose could be kept efficient, sinus infection from the nose probably would never occur.

Nasal obstruction due to deviations of the septum or spurs can be very effectively remedied by a submucous resection. In this operation no mucous membrane is sacrificed and the septum is returned to the midline where it divides the nose into two chambers of equal capacity. It is quite necessary that the nasal chambers be about equal in size so that the inspired air reaching the pharynx from the two posterior nares have the same properties as regards temperature and moisture. The older method of relieving nasal obstruction by performing a turbinectomy or cutting off a spur or thickened portion of the septum is only mentioned to condemn it. The nose has no more mucous membrane than is necessary for it to function efficiently and it has no way to compensate for any substantial loss of mucous membrane. No doubt many of the poor results formerly obtained in nasal surgery were due to the mutilating operations mentioned. Loss of mucous membrane leads in time to dryness of the nose because of loss of secreting surface and this can in no way be replaced. There is no excuse for ever removing a turbinate except for disease of the turbinate itself and then only the diseased portion.

Atrophic rhinitis is a condition in which there is an atrophy of the nasal mucous membrane and underlying soft tissues. At times it may involve the turbinates, leaving them to appear as mere stumps. The cause of this condition is not definitely known. However, as it usually begins before puberty, many writers believe that the adenoids play an important part as a causative agent. J. Adams(11) believes that the present custom of removing adenoids has reduced the incidence of the disease. The deficiency of vitamin A has been given as a cause. Some authors believe that sinusitis is a usual finding, if not the cause, laying particular emphasis on ethmoidal infection. The treatment is unsatisfactory and no specific cure has been found.

The common cold or acute rhinitis is the most frequent pathological condition of the upper respiratory tract. It may be defined as an inflammation of the nasal mucous membrane which secondarily usually invades the mucosa of the accessory sinuses to some degree(12). The capillaries of the nasal mucosa are dilated, the serous glands are stimulated producing a serous discharge. Later the blood vessels of the erectile areas of the nose which are found over the inferior turbinate, and the anterior border of the middle turbinate, became engorged. There is an infiltration of lymphocytes into the tissues, the mucous glands are stimulated and the secretions become thick and mucopurulent. Every one knows the infectious nature of the common cold. Many organisms have been isolated and they have been considered the cause of colds. Among them are the various strains of streptococci, pneumococci, staphlococci and hemophilus influenzae. Dochez, Mills and Kneeland(13) called attention to the fact that these organisms may not necessarily be the cause of colds because they do not increase in number or incidence at the onset of an acute cold. They, however, are a factor in the secondary inflammatory processes which occur. Foster(14) and others have produced colds with bacteria free filtrates. Many writers agree that experimental evidence suggests that the etiological agent of the common cold is able to activate pathological bacteria already present. Dochez and many others believe that a filterable virus and visible bacteria cooperate to produce infections of the upper respirtary tract. In view of the fact that vaccines which have been used to increase resistance to colds have been made from organisms, which are now believed to be of secondary importance, may account for the indifferent results which have followed the use of vaccines as a prophylactic measure for colds. Dochez and others have found no difference in the incidence of colds in the vaccinated and nonvaccinated.

When the involvement of the mucosa of the nasal accessory sinuses proceeds beyond a slight degree, we may have an acute infection of one or more sinuses. Ordinarily the healthy sinus is relatively free from bacteria according to most authorities. Also it has been found that the normal ciliary action of the nasal and sinus membrane is able to free the nose and sinuses of bacteria, which have been sprayed into the nose, in a very few minutes. It then would appear that when an acute sinusitis develops, one of several conditions may be present. First, the amount of the invading infection may be overwhelming so that the cilia may be unable to expel it adequately. Second, the normal ostium of the sinus may not be patent, because of inflammation surrounding it, or because of mechanical obstruction due to pathology in the nasal chamber. Third, the virulence of the invading organism may be such that the usual protective mucous covering of the cells of the sinus mucosa is unable to keep it from invading the cells. Fourth, Linton(15) has shown that the mucosa of the upper respiratory tract contains a lysozyme which is capable of a retarding or destructive action on bacteria. When this lysozyme is unable to destroy the organisms, infection may take place. These factors may be interdependent, and when one or all of these conditions obtain stagnation of the mucous layer begins, ciliary activity is impaired, bacteria enter the deeper layers and phagocytosis occurs. We now have an acute sinusitis.

When the discharge from the sinus becomes purulent, the inflammation of the mucous membrane gradually subsides, the dilated vessels regain their tone and the exudate in the submucosa is absorbed. The purulent stage usually lasts about one week, this is followed by a mucopurulent period and finally the discharge is clear mucous. Resolution should be complete in about two weeks. Surgical drainage is rarely indicated in an acute condition of the frontal, ethmoid or sphenoid sinuses. The antrum, because of its size, and relatively small ostium, may require surgical drainage during the purulent stage. All surgical measures during this period should be most conservative and as little should be done as possible to establish free exit for the pus.

When an acute sinus infection fails to subside, or when there are repeated infections so that the mucosa does not return to normal between attacks, the changes in the mucosa may become chronic. Anatomical defects of the septum or turbinates are frequently a major factor in the development of chronic sinusitis. The pathological changes in chronic sinusitis may be limited to the mucosa but frequently the bony walls of the cavities are also affected. This is especially true of the ethmoid cells. In the soft tissue the ultimate result is replacement of the mucous membrane by fibrous tissue. Hyperplasia or hypertrophy of the mucosa may occur or there may be ulceration and granulation tissue formation. In either case bacteria and minute abscesses may be found in the deeper tissues and are a source from which their products are absorbed to produce more general symptoms.

As a chronic sinus is not usually painful in the region of the sinus affected, unless there is an acute exacerbation, its existence is usually not suspected or its gravity is greatly minimized by the patient. The patient frequently states that he has a head cold which lasts all winter. The history usually discloses the occurrence of frequent colds or headaches. The victim may have a variety of symptoms, but usually he feels more or less depressed and miserable. The depression may vary from lack of ambition and power to concentrate to melancholia. There may be a feeling of heaviness or a dull headache, intermittent or continuous. Ethmoid infection may produce pain in the occiput or back of the neck. There is usually a chronic purulent discharge from the nose. If from the antrum, frontal or anterior ethmoid cells, it will appear in the middle meatus. Discharge from the sphenoids and posterior ethmoids finds its way to the pharynx. The nasal mucosa is usually congested particularly over the turbinates. These patients are frequently sensitive to barometric changes, being more uncomfortable when the barometer is low. Until comparatively recently the accessory sinuses were not generally mentioned as a frequent source of disease at a distant point. A chronic sinus may act as a focus of infection and produce chronic bronchitis, asthma, neuritis, fibrositis, neuralgia, rheumatism and rheumatoid conditions and perhaps many others. Most every physician recognizes the part played by tonsils, infected teeth and other infected tissue or organs in the production of various diseases. It is quite likely that many unsatisfactory results obtained in the past after removal of teeth or tonsils were due to the fact that a chronic sinus infection was present but not recognized. It has been stated that when a chronic inflammatory process has been initiated and the origin from a primary focus is suspected, but not obvious, it is well to make a thorough examination of the paranasal sinuses.

The x-ray is a very necessary aid in the diagnosis of chronic sinusitis. It is particularly reliable for the maxillary antra and frontal sinuses. The presence of hyperplastic mucous membrane, pus or polyps can usually be quite accurately demonstrated particularly with the aid of an opaque substance.

Sinusitis in children probably occurs much more frequently than is generally supposed. It may begin shortly after birth. The so-called frequent colds and continuous discharging nose of the child are sinus infections. Adenoids play a very important role in the development of sinus diseases of children, by their size they are frequently the cause of obstruction of nasal respiration. The young child not knowing how to clear the nasal chamber and the older one not being able to because of the obstructing adenoids, has the proper setting for the development of sinus infection. This leads to a congestion of the nasal mucosa and interferes with the ventilation of the sinuses and predisposes them to infection. No doubt many cases of chronic sinus disease of the adult have their beginning in childhood.

In treating sinus disease of the child, it is most important to first remove all traces of the obstructing adenoid mass. Many sinus infections will promptly clear up after this treatment alone. After relieving the obstruction to respiration, the general condition of the patient should be attended to as much as possible. Cod liver oil is very essential. Proper diet and other general measures should be prescribed. Irrigations of the nose are not advised. A nasal spray of bland oil containing a weak solution of ephedrine is beneficial in favoring drainage and restoring to normal the swollen mucosa. A milder climate in winter is frequently beneficial. Surgery on the sinuses of young children is usually not necessary and must be avoided if at all possible.

The paranasal sinuses by virtue of their relation to certain vital structures are too frequently the cause of serious and fatal complications. Some of these are cavernous sinus thrombosis, meningitis, brain abscess, retrobulbar neuritis and osteomyelitis of the cranial bones.

Too little attention has been given to the prophylactic treatment of sinusitis. Purulent sinus disease is infectious, frequently several members of the same family are afflicted. Very little has been said about protecting other members of a family or associates from one suffering from purulent sinusitis. It can be done by teaching precautions, such as are taught a tuberculous patient, paying particular attention to the control of discharges of coughing or sneezing and the proper disposal of the discharges resulting from blowing the nose or clearing the throat. The general health of the sinusitis patient should be given attention in order to build up the best possible resistance.

Nasal treatment is most important, when anatomical defects are present they must be remedied. A perfect cure will most likely relapse in due course of time, if the faulty ventilation of the nose, due to septal thickening, deviations, hypertrophied turbinates or other pathological conditions, is not corrected, as these conditions may have been the primary cause of the sinusitis. Many cases of sinusitis will subside after proper attention is given to the nose, and even though they may not be completely cured, the patient is sufficiently relieved of his symptoms so that surgery of the sinuses is not warranted. In many cases of chronic sinusitis, surgery is absolutely indicated. Some of these indications are profuse discharge, polypoid degeneration of the sinus mucosa, involvement of neighboring structures, some cases of asthma, sinuses acting as a focus of infection and those having frequent acute exacerbations producing headache and other pain. The choice of the operation depends on many factors and will not be discussed in detail. However, whatever operation is performed must be thorough enough to remove all or very nearly all of the diseased mucosa or a recurrence will be most certain. External approaches which leave a visible scar or deformity should be avoided except in extreme cases and then only after intranasal methods have failed. Fortunately a very high percentage of chronic sinus conditions can be cured or at least markedly improved with proper surgical treatment.

Nasal polyps have been recognized and surgically removed for a great many years. They were believed to originate from the mucous membrane when there was disease of the underlying bone. They were known to recur with great frequency unless they were most thoroughly removed. Later polyps were considered to be the result of chronic sinus disease and to have their origin within the sinuses themselves. Many rhinologists still adhere to this theory.

In recent years, Hansel and others have advanced the thought that polyps are very frequently if not always the manifestation of allergy. It would perhaps be a logical thing to assume that polyps may and frequently do occur as the result of chronic sinusitis where there is no manifestation of allergy. It is also reasonable to assume that they occur in the presence of chronic sinusitis where there is a manifestation of allergy. Also the evidence is rather convincing that they may and probably do occur from allergic conditions without any demonstrable sign of sinusitis. The treatment of polyposis is to remove them completely from the nose as well as from any sinus cavity in which they may be found.

The nose and paranasal sinuses are subject to several chronic granulomata. The most commonly found are caused by syphilis, tuberculosis, actinomycosis, carcinoma, sarcoma and pyogenic infections. As their appearance, diagnosis and treatment does not differ materially from that of the same tumors found elsewhere, they will not be discussed.

During the last few years allergy has become an important problem in the diagnosis and treatment of inflammatory diseases of the nose and paranasal sinuses. It is necessary to differentiate it from infections and it must also be remembered that allergy and infection may be present at the same time. Hansel described the allergic nose as having a mucous membrane with a pale gray palor and being edematous, the more edema present the greater the palor. The definite diagnosis of allergy depends on a cytological examination of the nasal secretion. A high percentage of eosinophils is diagnostic of allergy, while when the neutrophils are predominant an infectious condition is present. Cowie and Jiminez(16) make smears as for the staining of blood. They regard a count of 20 to 25% of eosinophils in a nasal smear as diagnostic of allergy. The treatment of allergic conditions of the nose depends first on determining the allergen. The patient must then either avoid it or be desensitized. During an acute exacerbation of an allergic condition, all surgery should be avoided. Most authorities feel that all operative procedures upon the nose or paranasal sinuses of an allergic patient should be performed with the idea of restoring function and eliminating infection. The indications are based upon symptoms and pathological changes as if no allergic condition were present.

DISCUSSION

DR. W. L. ROSS, (Omaha): As to Dr. Koebbe's paper concerning "Common Intranasal and Sinus Pathology"—it is a disease often overlooked; therefore a method of positive diagnosis is the most important thing to consider. Dr. Koebbe gave a good illustration as to how to differentiate; but you cannot tell by that method whether the mucopurulent material is coming from the nasal mucous membrane, from the mucous lining of the upper pharynx, or from the sinuses. By evacuating each individual sinus, with the proper instruments, you can locate whether it is in the anterior, ethmoidal or frontal sinuses, or whether it comes from the posterior and sphenoidal sinuses.

Once the diagnosis is made, the sinuses can be drained. Drainage, alone, will not always complete the cure. The infection involves the mucous membrane and the underlying lymphatics, cartilages and bone. It has also invaded the pharynx, a good medium for the culture of the germ. From the above tissues the germs may be carried by the lymph channels and the blood stream to all parts of the body, and the resulting toxemia produces all the malaise the Doctor outlined. This primary infection is acknowledged to be a positive factor in heart disease and other troubles. To correct the above pathology, it is of vast importance to stop the motility and the multiplication of the germs.

(Bibliography in Reprints).

OPERATIVE VERSUS THE MANIPULATIVE TREATMENT OF SLIPPED FEMORAL EPIPHYSIS WITH DESCRIP- OF CURATIVE OPERATION

Samuel Kleinberg and Joseph Buchman, New York (*Journal A. M. A.*, Nov. 7, 1936), consider certain features of the anatomy and physiology of the hip and of the symptomatology which have a bearing on the rationale that should guide the orthopedic surgeon in his therapy for slipped femoral epiphysis. It appears to them that successful treatment must include the following: 1. It must be as atraumatic as possible. 2. The deformity must be corrected. 3. The circulation across the epiphyseal area must be reestablished to produce an early fusion between the head and neck of the femur. This can be best accomplished by an operative resection of the epiphyseal plate, realinement and placing in intimate contact the cancellous bone of the head and neck of the femur. With these points in mind one of the authors evolved the following technic: Through a Smith-Petersen incision the hip joint is exposed and the capsule is incised crucially. The femoral head is delivered into the wound. The ligamentum teres is disregarded and may be sectioned. The femoral head is then removed in its entirety with a curved chisel proximal to the epiphyseal plate. The epiphyseal plate is excised, exposing the healthy bone of the femoral neck. The removed section is wedge shaped, base superiorly and anteriorly. The distal surface of the head is then curetted to remove all remnants of the epiphyseal plate and is shaped to fit the neck. The head is then replaced in the correct position and fixed to the neck by means of an ivory peg inserted through the fovea capitalis. The dislocation is then gently reduced, the capsule is closed with several interrupted sutures, and the wound is closed in layers. The limb is immobilized in a plaster-of-paris spica in about 30 degrees of abduction, with the patella pointing forward. The postoperative treatment consists of immobilization for four weeks in the plaster-of-paris spica. This is followed by several weeks in a suspension apparatus to allow mobilization of the hip. The patient is then supplied with a well fitted Thomas hip brace, the utmost care being taken that the weight is borne on the ischial tuberosity, and walking is permitted. No direct weight bearing is permitted until the roentgenogram shows that the femoral head has been completely revascularized. This ordinarily takes about eight months, at the end of which period all restrictions are discontinued.

CLINICAL USE OF DIURETICS

The most advantageous diuretic to use will depend on the condition of the kidneys and whether filtration or reabsorption can be varied to the greatest degree. Joseph M. Hayman Jr., Cleveland (*Journal A. M. A.*, Dec. 12, 1936), studied the records of 213 patients with edema who were admitted to the Lakeside Hospital during the last eight years in an effort to assay the value of diuretics. An increase of 500 cc. or more in urine volume above the control level has been regarded as a diuresis. The degree of diuresis varied greatly. In many cases of congestive heart failure, digitalis in full doses led to as marked a diuresis as any other drug. When effective, the mercurials and urea usually produced larger urine volumes than the caffeine group, salts or sugars. Diuretic drugs should be regarded only as adjuvants to other methods of treatment in the removal of edema. There must be an adequate renal blood flow and a certain degree of parenchymal integrity in the kidney for them to be effective. They have no value in acute nephritis and rarely in chronic glomerular nephritis. Diuretics have their greatest usefulness in congestive heart failure, after the patient has been digitalized. Here the mercurials salyrgan and mercupurin are the most regularly effective. In portal cirrhosis with ascites, while diuretics have not prevented the necessity of tapping, the regular use of these mercurials has lessened its frequency. Patients with "nephrotic" edema have responded more regularly to ammonium chloride and salyrgan or to urea than to any other diuretics.

HOW ABOUT TEMPER?

"Didn't you claim when you sold me this car that you would replace anything that broke or was missing?"

"Yes, sir. What is it?"

"Well, I want four front teeth and a collar bone."—*Automobilist.*

The trouble with giving until it hurts is that so many persons bruise easily.—*Indianapolis News.*

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ASSOCIATION MATTERS

The program committee has set the dates for the annual meeting as April 25, 26, 27, 28, 1938, Hotel Cornhusker, Lincoln.

It is understood that the first day of the annual meeting will be turned over by the committee for trap shooting and golf.

Those wishing to present papers before the next annual meeting of the Nebraska State Medical Association, please send name and title to Dr. R. B. Adams, secretary, Center McKinley Bldg., Lincoln. No requests for space will be honored after March 1st, 1938.

Your annual dues are payable January 1, 1938. Please send $10.00 plus the amount of your local dues to your county secretary.

AMERICAN BOARD OF INTERNAL MEDICINE

The American Board of Internal Medicine will hold its next written examination on Monday, February 14, 1938, in various centers of the United States and Canada.

The examination will consist of two sessions of three hours each with the morning session held at 9:00 o'clock A. M., and the afternoon session held at 2:00 o'clock P. M.

The candidates who are successful in this written examination will be eligible to take the practical examination which will be held the Friday and Saturday prior to the opening of the annual session of the American Medical Association in San Francisco in June, 1938.

The final date for filing applications for this written examination is January 15, 1938, and all applications should be in the office of the chairman before that date.

For further particulars and applications address Dr. Walter L. Bierring, M. D., Chairman American Board of Internal Medicine, Suite 1210, 406 Sixth Avenue, Des Moines, Iowa.

EXAMINATIONS AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The next examination (written and review of case histories) for Group B candidates who have filed applications will be held in various cities of the United States and Canada, on Saturday, February 5, 1938.

The general oral, clinical and pathological examinations for all candidates (Groups A and B) will be conducted by the entire Board, meeting in San Francisco, California, on June 13 and 14, 1938, immediately prior to the meeting of the American Medical Association.

Applications for admission to the June 1938 Group A examinations must be on an official application form and filed in the Secretary's office before April 1, 1938.

For further information and application blanks address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh (6), Pa.

PEDIATRIC POINTERS

By JOHN V. RILEY, M. D.

1. A so called bilious child may have hepatic pathology.

2. Apparent painful urination may be a reflex disturbance from the rectum.

3. A child with soreness in the right side even without fever should make you strongly suspicious of appendicitis.

4. Intra-abdominal strain reflexly from phimosis may aggravate an inguinal hernia.

5. A child that eats well but does not grow may be suffering from potential hyperthyroidism.

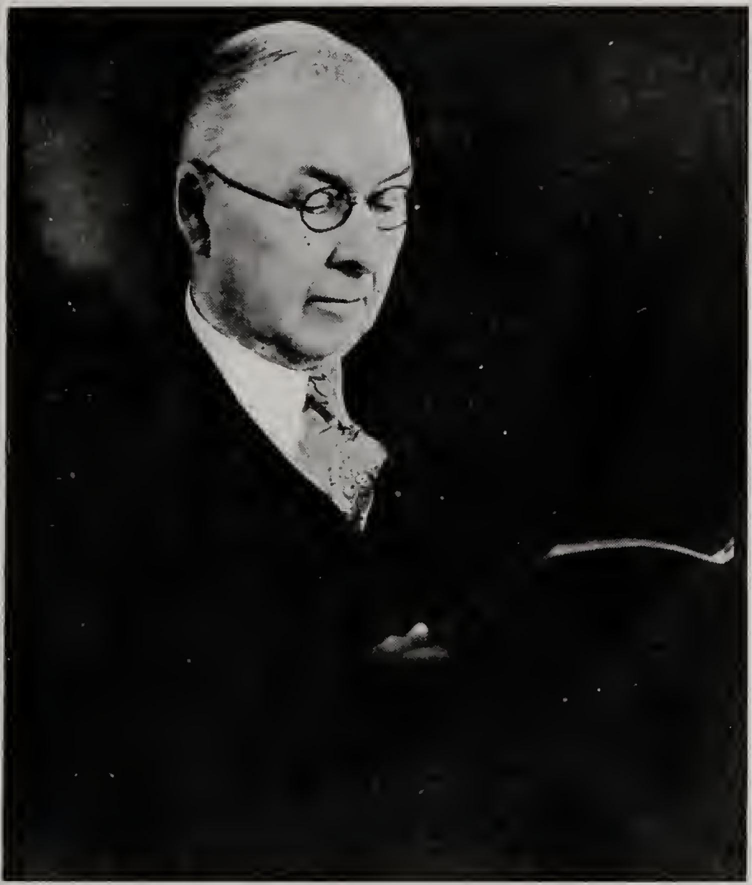
6. Bear in mind the possibility of an incipient goitre in children, especially girls, so do not call all cases of nervous instability chorea.

7. Abdominal pain after eating with recurring vomiting may mean a peptic ulcer.

8. Remember diabetes as a possibility even in infants.

9. Some mothers still believe in "growing pains" but we know it to be the sign of a possible serious local or reflex infection.

10. Remember ethmoiditis as an obscure cause of fever or reflex abdominal pain.



Dr. Francis A. Long, 1859-1937

Across unfurrowed prairies,
He blazed a shining trail
And held aloft a flaming torch
For those who dared not fail.

Out from his kindly heart,
Out from his mighty hand,
Abundantly he gave,
Dauntless, conquering the land.

Trails must come to the end
And weary hearts seek home;
Twilight has no dawning
When you climb the trail alone.

Though dust has stopped his lips
He's here in wind and rain,
He and prairie-earth are one
He's home again.

HIGHLIGHTS OF ANNUAL CONFERENCE OF SECRETARIES AND EDITORS OF CONSTITUENT STATE MEDICAL SOCIETIES

The conference was held at the headquarters of the American Medical Association in Chicago on November 19 and 20. The transactions of the Conference will be published in the Journal of the American Medical Association, and it is hoped that physicians will read these reports carefully. There is much food for thought, and it behooves every physician in the practice of medicine to familiarize himself with the problems which confront him now and keep clearly in mind the rapid social changes that are occurring under our very eyes.

No one in attendance of this conference could escape the observation that East, West, North and South, but for minor local modifications, Medicine and Medical Society activities do not differ materially. This in spite of the fact that other economic problems in the various geographical sections of the country are prominently different.

STUDENT HEALTH SERVICES

A survey made by the Bureau of Medical Economics of the American Medical Association on Student Health Services leaves no doubt in the minds of physicians that Medical Societies would do well to give the matter its due consideration. These studies revealed that health service to students in most educational institutions varies from physical examination and first aid to complete medical, surgical and hospital care. Charges for health service also vary widely with the individual school or college. It is conceivable that once a student has adopted the habit of receiving institutional medical care it may be quite difficult for him to become reconciled to a regime of personal and private medical service following graduation. Some county medical societies are solving this problem by taking an active part in the health activities of their local educational institutions affording the students free choice of physicians. The function of a school is to teach, not to provide medical care in competition with local alumni and local hospitals.

POSTGRADUATE FACILITIES

A discussion on postgraduate functions of State Medical Societies revealed that many of the states have active programs approximating the efforts of our Committee on Public Activities. In some, the State Society finances this work, in others nominal fees are charged individual matriculants. In some states, again, combined funds from the Medical Society and various governmental agencies are used. These courses are uniformly well received.

PNEUMONIA CONTROL

A discussion on pneumonia control and the part played by some few state medical societies, notably New York and Pennsylvania, was of great interest. Scientific progress in this treacherous disease, it appears, would warrant an effective program along educational lines in connection with refresher courses now under consideration. State funds, as well as money from other sources must be used in combating the ravages of pneumonia. The physicians for their part must brush up on the newer concepts of the disease as depicted in recent literature on diagnosis and treatment.

EDITORIAL DILEMMAS

Editors of State Journals have their problems. One gentleman asked for advice on how to make doctors read their own Journal. Though the laugh was genuine and unanimous, one could see many nodding heads, apparently an expression of universal editorial observation. The discussion took on a more serious tone when the quality of medical writing came under consideration. Again there was unanimous feeling that some physicians simply refuse to abide by rules of grammar, syntax or other etiquette of orderly composition. Some excellent papers are ruined by this disregard of principles of writing. Then there is the doctor who sits down to producing a short article and ends up by sending in a tome. Yet none of these sinners compare favorably in disrepute with the temperamental author who insists that editorial modifications cut the very heart out of his coveted opus. Some writers do not take writing seriously enough, others take the task altogether too seriously. Barring these exceptions, however, the manuscripts on the average represent thoughtful consideration as well as careful preparation.

GROUP HEALTH ASSOCIATION INCORPORATED

Almost an entire afternoon was devoted to a discussion of Group Health Association Incorporated. This, as most readers know, is a vicious piece of unofficial political maneuvering in Washington to serve as a wedge for extensive medical socialization. The Association was organized with silent caution and where the idea and the money for financing it originated remains a mystery. Under the articles of incorporation any employee of the government, regardless of income, may join and receive a promise of full medical, surgical, hospital and other preventive and curative care at $39.60 a year per family regardless of number of dependents. Dues for single persons are $26.40 per year. Only the army and navy personnel is denied participation in this plan. At the present time the blessings of this institution are open only to employees of the H. O. L. C. There are five hired doctors to do the work. There are in Washington around 105,000 government employees to whom the services of the corporation may be made available. For his own interest in this matter the reader may refer to the comprehensive article published by the Bureau of Economics of the American Medical Association in the Journal of A.M.A. for October 2, 1937, page 9 of the Section on Organization.

Another item for discussion was the Committee of 431 physicians organized following the appearance of the two volume report of the American Foundation for Study of Government entitled American Medicine, Testimony Out of Court. This Committee, it will be remembered, organized itself and promulgated certain principles on which medical practice must rest if the profession is to retain its ideals and its scientific progress in the rush for what politicians call Social Security. The Conference could find no justification for the extensive publicity that emanated from this comparatively small group of physicians. The press, it will be remembered, interpreted the move as a rebellion against organized medicine. The influential names that grace the present list adds confusion to the situation. For the good of those who supply, and those who receive medical care, it was concluded that spokesmanship on policy must remain limited to the officially designated representatives of medicine. These representatives hold office by popular consent of the members of the American Medical Association. If official attitude conflicts with the beliefs of their constituents these constituents have full rights and powers to relieve the incumbent officers of their duties and replace them with men who will carry out the wishes of the majority.

THE YORK COUNTY TUBERCULOSIS SOCIETY

A group of interested citizens of York county met at the Hotel McCloud in the afternoon of November 30, for the purpose of organizing a county tuberculosis unit of the Nebraska State Tuberculosis Association. Mr. E. H. Smith was elected president. York is the first County to benefit from a tuberculosis survey. A report of this study was made before the Nebraska State Medical Association at its annual session last May by Dr. Robert E. Harry who headed the survey.

In addition to addresses delivered by local leaders the organization meeting was addressed by Dr. Philip P. Jacobs of New York, Director of Publications and Extension of the National Tuberculosis Association, Dr. W. W. Bauer of Chicago, Director of the Bureau of Health and Public Instruction of the American Medical Association, Dr. John F. Allen, President Nebraska Tuberculosis Association, and Dr. Roy W. Fouts, President Nebraska State Medical Association.

The afternoon meeting was followed by a dinner in the hotel. There were many physicians present from surrounding territory.

In the evening the new organization held a public meeting in the United Brethren church. About 300 people attended. Addresses were delivered by Drs. Philip P. Jacobs, W. W. Bauer, John F. Allen, and Robert E. Harry.

EDITORIAL PARAGRAPHS

The Good Samaritan Hospital in Kearney, Nebr., organized a new staff the early part of December. According to the superintendent, the hospital has applied for a class "A" rating.

We are still watching the outcome of the H. O. L. C. project in the practice of medicine in Washington. We understand that corporations cannot practice medicine. How the government can get around this legal restriction remains to be seen.

It is announced by the Board of Control that a new wing for men will be built at a cost of $125,000.00 to increase the bed facilities of the Kearney State Tuberculosis Hospital. The building will increase the hospital's capacity by 40 beds, and will include operating room and an x-ray unit.

At a recent conference of pediatricians where fatal acute enteritis among new born infants was discussed, Dr. H. N. Bundesen, president of the Chicago board of health, stated that none of the babies who died in the recent outbreak had been breast fed from the beginning. The breast feeding of infants therefore is still an important item of infant care.

According to Dr. J. B. Burt of the faculty of the University of Nebraska, Department of Pharmacy, a mint-like weed which grows wild in western Nebraska may become an economically important industry in this state. The *monarda pectinata* grows in the bad lands of Scottsbluff county and the oil lends itself to chemical extraction. This extract is known chemically as carvacrol. It is an oily compound with highly antiseptic qualities. The oil, Dr. Burt says, may be used in the treatment of various dermatological disorders, especially those of a fungoid nature.

A joint meeting of the American Medical Association, the American College of Surgeons, and the editors of science news service was held in Chicago early in November. The purpose of this conference was to "unmuzzle medical news," according to Mr. W. Kaempffert, who acted as chairman. "Physicians and surgeons, following their code of ethics, thwart the obtaining of medical news and its publication even by such science writers as are present here." The outcome of the conference is a proposed scheme for making medical news sources more readily accessible to responsible science writers.

OBITUARIES

Dr. F. A. Long, born in Pennsylvania, February 16, 1859. With his family he moved to Iowa in 1867. Following graduation from Normal school he taught near Moulton, Iowa, for two years. He studied medicine in apprenticeship under a physician with whom he boarded while teaching school. In 1880 he entered the Medical School of the University of Iowa. Following his graduation in 1882 he located in Madison, Nebraska, in June of that year and remained in practice there until his death November 24 of this year.

A pioneer in early medicine in Nebraska, he was ever active in local, district, and state medical organization. The Madison-Five Counties, the Elkhorn Valley, the Missouri Valley; in fact, every association with medicine as its dominating interest received his co-operation and his support. He was president of the Nebraska State Medical Association in 1906-07. He served as chairman of the Publication Board of The Nebraska State Medical Journal since the time when the Journal was first established. In December, 1920, he became its Editor.

In press at the present time is a book by Dr. Long in which he recounted his experiences as a country doctor of the '80's. In addition to a medical practice and an ardent worker in medical organizations, Dr. Long was interested and influential in the good road movement in this area. For many years he was vice-president of the Meridian Highway Association.

Surviving are three daughters, Frances of Santa Barbara, Calif; Harriet, of Salem, Oregon; and Margaret (Mrs. J. W. Wisenand) of Peoria, Ill.

Kay, Zacheus La Fayette, McCook, Nebr., born in Iowa in 1849. He graduated from Kentucky School of Medicine in 1876. He came to McCook in 1884, the first physician to settle in the community. He led a very active professional and civic life. A pioneer of the early southwestern part of the state, he played an important role in building up that section of the country. He had served for many years as physician and surgeon for the Burlington Railway, also as health officer of the city of McCook. In 1931 the Red Willow County Medical Society honored him with a banquet at which the late Dr. B. B. Davis, his former co-worker, was the principal speaker.

Dr. Kay died of uremia November 19, 1937. He is survived by two sons, Elmer and Jud.

Dr. Edwin Oxford, Chambers, Nebr., graduated Creighton Medical College in 1905, practiced for some time in Omaha, located in Chambers since 1917, died in Omaha on December 6, following a recent illness. His wife survives.

PLANS AND PROGRESS OF THE DIVISION OF MATERNAL AND CHILD HEALTH, NEBRASKA (STATE) DEPARTMENT OF HEALTH

Pregnancy is a physiological condition, but there is no condition which so quickly may become pathological.

The abortion problem is not purely or even essentially a medical problem. On the contrary, the social, legal, ethical and religious approaches to the problem are more important, than the medical. However, the problem is laid at the door of medicine, and abortion mortalities enter into the gross estimates of maternal mortality. In fact the percentage of abortion deaths to the total maternal mortality from 1930-1935 ranges from 17 to 22% of the total mortality.

To start the attack on maternal mortality, men and women should become interested in the problem and become informed about it. Let them find out from the medical profession, the basic principles of maternity hygiene which are of importance to them as individuals, and let them apply this knowledge to themselves and, within their immediate sphere of influence, to their family, their friends, and their community.

REQUESTS TO COUNCILORS

During the calendar year of 1937 the refresher course has made available some service to eight councilor districts. The way seems open now for providing an adaptable program, not only to the other councilor districts in the very near future, but for second visits to some of those districts already served. Requests may reach this office directly from councilors, through members of the Maternal and Child Health committee, or through Mr. M. C. Smith, Executive Secretary.

LOCAL MATERNAL AND CHILD HEALTH PROGRAMS

The problem of developing effective and desirable local and county programs in Maternal and Child Health in Nebraska is more difficult than elsewhere because of limited legislation regarding local administrative agencies. Nevertheless the need for the development of local programs is growing more apparent every day.

Local county programs which actually reduce maternal and infant mortality are desirable. Suggestions as to how such programs can be developed in their respective areas from funds chiefly derived from local sources are in order at this time. This office is desirous of aiding and cooperating with local communities actually working with this problem.

—J. W. Bell, Director, Division of
Maternal and Child Health.

SERUM COMMITTEE OF THE NEBRASKA STATE MEDICAL SOCIETY

Report of the results obtained by the use of human convalescent polio serum in the treatment of infantile paralysis during the 1937 epidemic.

Number of cases in Omaha		34
Number of cases out of Omaha		39
Total number of cases		73
Recoveries—no Paralysis:		
Serum alone given in pre-paralytic stage	36	
Serum with other treatment in pre-paralytic stage	4	
Serum alone given after paralysis	7	
Serum given after paralysis with other treatment	1	
Total recoveries without paralysis		48
No Results:		
Serum given in post-paralytic stage	9	
Serum given in pre-paralytic stage	5	
Deaths	11	
Total number of cases—no result		25
		73
Types of Paralysis:		
Bulbar		26
Paralytic		43
Meningitic		2
Encephalitic		2
		73
Doctors' opinions as to efficacy of serum:		
Yes		43
No		4
Uncertain		26
		73

Serum was furnished to approximately one hundred individuals with poliomyelitis. Seventy-three reports from doctors were complete in the detail desired.

The significant fact concerning this report is that approximately one-half of the cases were diagnosed before the onset of paralysis. The doctors of our community are especially to be commended because of their alertness and special knowledge of the symptoms which usher in this dread disease with its bizarre manifestations and results. The good results obtained again emphasize the necessity of a diagnosis in the pre-paralytic stage if anything in the nature of a serum, vaccine, medicine, hypertonic solution, multiple lumbar puncture or other remedial agent is to be of any value in the treatment of this affliction. The necessity of a common knowledge of the ordinary symptoms which usher in this peculiar and unusual disease can scarcely be overemphasized.

A second outstanding feature of this past epidemic, and exemplified in this report, is the large proportion of bulbar cases, there being approximately one-third. I do not know of any explanation of the reason for this, nor have I read or heard anything which in any way assists in explaining it.

Thirdly: two-thirds of the total reported cases recovered without paralysis. This fact alone speaks for itself. Whether convalescent human polio serum is helpful in preventing a possible paralysis is best left to each individual's opinion and the results obtained in every day work at the bed-side. In a personal conversation with Dr. Walter L. Bierring, in charge of the State Department of Health of Iowa, a few days ago, Dr. Bierring stated, "When human convalescent serum is administered in adequate dosage in the pre-paralytic stage something happens; the temperature falls, the patient improves, and in a goodly number of cases, paralysis does not result."

In no better way can I explain the results of the survey of the replies of doctors as to results obtained in the use of human convalescent polio serum in the treatment of acute anterior poliomyelitis.

The Serum Committee of the Nebraska State Medical Society is now ready to take blood from patients convalescent from scarlet fever and from that blood prepare human convalescent serum to be used in the treatment and prevention of scarlet fever. The Committee will pay each donor of blood three dollars. Blood must be obtained not later than three months after convalescence from scarlet fever. The life tenure of convalescent scarlet fever serum is only nine months in contrast to convalescent polio serum which is about two years. We have a small amount of scarlet fever serum on hand at the present time which is available for physicians who need it.

If you have convalescent scarlet fever patients who wish to help us in this worthy effort, telephone or write Dr. A. S. Rubnitz, 723 Medical Arts Bldg., At 5070, or the undersigned—

—Floyd Clarke, M. D.,
Chairman Serum Committee,
Nebraska State Medical Society.

SECOND NATIONAL SOCIAL HYGIENE DAY

"Stamp out Syphilis—Foe of Youth" will be the theme of the Second National Social Hygiene Day to be observed on February 2, 1938.

Of the half million known new cases of syphilis each year, one in five is found among young men and women under twenty years of age. More startling perhaps is the fact that half of all syphilis infections are contracted by individuals in the age group of twenty to thirty years, a group which represents only one-fourth of the nation's population.

In line with the youth theme the American Social Hygiene Association is enlisting the interest of those national organizations whose primary concern is with the problems of young people. The American Youth Congress, the General Federation of Women's Clubs, Parent-Teacher organizations, church and "Y" groups, service clubs and many others will be asked to join in special observance of the proposed program.

Many were active during the period of the First National Social Hygiene Day early this year. New cooperating organizations, impressed by the success of that pioneer venture, have come forward voluntarily to share in the task of making the Second Social Hygiene Day an even greater success.

Last February's event resulted in more than 500 conferences and meetings, 135 radio periods and a sweeping flood of newspaper and magazine comment.

Indications point to an even greater national response to the 1938 Social Hygiene Day and all agencies and persons who have at heart the success of the campaign to stamp out syphilis are urged to join in this national endeavor to tell all the people the facts about this enemy of youth and public health, and how it may be conquered.

In addition to preliminary activity for the Second National Social Hygiene Day, the American Social Hygiene Association, through its National Anti-Syphilis Committee, is organizing state and local committees to assist in the appeal for $500,000 which will enter its general solicitation phase immediately after February 2, 1938.

General John J. Pershing heads the committee, Dr. Ray Lyman Wilbur is vice chairman, and Charles H. Babcock is chairman of the executive committee. Over two hundred leaders in the professions and business have endorsed this national appeal and have pledged themselves to aid in the fight to "stamp out syphilis."

TUBERCULOSIS ABSTRACTS

When is it safe for the physician to certify that his tuberculosis patient is free from infection? The practice of making repeated sputum examinations before declaring a patient bacillus-free is commendable. But apparently dependence on sputum examination alone is not enough. Evidence is accumulating to show that tubercle bacilli may be recovered from the stomach in cases in which sputum examinations have been repeatedly negative. Two Swedish workers report the results of their extensive experience with gastric lavage and warn against the false sense of security that may arise from failure to demonstrate the tubercle bacillus by the usual methods. Abstracts of their paper follow.

THE IMPORTANCE OF GASTRIC LAVAGE

Gullbring and Levin of the City of Stockholm Tuberculosis Hospital at Söderby, after reviewing the literature on gastric lavage for the recovery of tubercle bacilli, report the results of gastric lavage in a series of 348 adult tuberculous persons in whom there was an absence of sputum, or who were bacillus-free when tested by the usual methods.

TECHNIQUE

Gastric lavages were made on a fasting stomach with 100-200 cm. of sterile water with sterile tubes and vessels. The sputum-like constituents were separated from the lavage water by means of sedimentation and centrifugation and the centrifugate was examined by means of:

a. Direct preparations on the sediment, stained according to Ziehl-Neelsen
b. Cultures on egg substrate according to Hohn's method after pre-treatment with 10 vol. % H_2SO_4
c. Inoculation on guinea pigs, which were examined post-morten after 6 weeks

A test was considered positive whether culture alone, or the guinea pig test alone, or both at the same time, were positive.

The guinea pig test proved to be the most sensitive. Only in a small number of cases were the cultures alone positive. A single negative lavage is but slight proof of the absence of tubercle bacilli, therefore the patient should be lavaged 2 or 3 days following the first test in order to obtain more certain results and to make the period of waiting for the results as short as possible. This method, however, is too expensive for routine practice and the authors propose a further simplification as follows: The patients are lavaged on 3 successive days but the lavage fluids from each day are saved, and the total sediment is injected into 1 or 2 guinea pigs. This ensures optimal results at no great expense.

CLASSIFICATION

Disregarding all pathological-anatomical considerations, the authors divided the cases into four groups:

I. Those with apparently fresh alterations (Ranke's primary and secondary stages)

II. Those with alterations of older appearance (Ranke's tertiary stage)

III. Pleuritic cases with large exudates

IV. Pneumothorax cases

All of the 348 tuberculous cases studied in this investigation were either without sputum or had been proved to be bacillus-free by other current methods of examination. Group I comprised principally patients of about 20 years of age who exhibited primary complex with fresh infiltrates in the pulmonary area and corresponding swelling of the lymphatic glands. In some cases only an enlargement of the hilus gland was found. In this group of 97 cases 55 (57%) were positive by gastric lavage.

Group II is the largest and, from the practical point of view, incomparably the most important. It includes cases with clinically established tuberculosis, most of which were of the older productive cirrhotic forms. Of the 141 cases without cavities, 43% exhibited bacilli and in the 66 cases with cavities, bacilli were found in 94%.

The social implications of these findings are important. These types of cases are generally regarded as "closed" or healed tuberculosis cases and not a menace to others, yet apparently about one-third of them excrete tubercle bacilli from the lungs. It appears also that practically all cases with cavity formation are also bacillus carriers whether sputum is present or not and whether tubercle bacilli can be demonstrated in the expectoration or not.

Group III comprises the extensive pleuritis cases where the pulmonary contours lying posteriorly could not be judged. In all these cases the appearance of the exudate was the first symptom of the outbreak of the tuberculosis. Seven cases out of 25 (28%) were positive.

Group IV were cases lavaged during or after pneumothorax treatment, including cases in which the lung was either compressed or relaxed and some possibly healed. Of the 19 cases examined 8 (42%) were positive.

For the entire group of 348 cases supposed to be bacillus-free, 55% were shown by gastric lavage to be excreting tubercle bacilli.

THE SOCIETIES

The **Omaha-Douglas County Medical Society** meeting was held on December 14th.

Dr. Floyd S. Clarke made a short announcement to the effect that scarlet fever serum is now available to all physicians who need it. Dr. Jahr spoke on the subject of Christmas Seals of the Nebraska Tuberculosis Association, in the absence of Dr. J. A. Weinberg.

Dr. E. M. Walsh opened the scientific program with his case report on The Use of Serum in Type 11 Pneumonia.

Dr. J. Jay Keegan's subject, The Clinical Pathology of Brain Tumors with Microscopic Slides and Illustrative Cases was discussed by Drs. J. P. Tollman and Dr. G. Alexander Young.

Dr. E. D. Plass, Professor of Obstetrics, State University of Iowa, Iowa City, Iowa, guest speaker of the evening, closed the scientific program with his talk on Experiences With Rupture of the Membranes as a Method of Inducing Labor. Discussion followed from the floor by Drs. Ralph Luikart, Frank Murphy, and Dr. David Findley.

The **Lancaster County Medical Society** met on November 2, 1937, at their Society rooms, Dr. A. D. Munger presiding.

Preceding the regular program, Dr. B. F. Williams spoke briefly on "The Organization of a Modern Mental Hospital," with some remarks on some phases of treatment, especially the insulin shock therapy, in schizophrenia cases.

The regular scientific program consisted of the following papers: I. Tibia and Fibula Lengthening by the Turnbuckle Method, by Dr. F. A. Alcorn, who also presented some patients showing the clinical results of the method. Dr. Alcorn's paper was discussed by Drs. Orr and J. E. M. Thomson. II. Amebiasis, by Dr. George W. Covey. Dr. Covey's paper was discussed by Drs Marshall Neely and I. C. Munger, Jr.

Following the scientific meeting the regular business meeting was held.

The **Saline and Fillmore County Medical Society** met in Wilber at Hotel Wilber for dinner and program, November 18, 1937.

On the program were Dr. George W. Covey, Dr. Roy H. Whitham and Dr. Marshal Neely, all of Lincoln. Dr. Robert C. Kirchman was in charge of local arrangements.

The doctors and their wives of Cheyenne. Kimball and Deuel counties met at the Harris hospital on Monday evening for the regular monthly meeting of the **Tri County Medical Society** and Auxiliary. A six o'clock dinner was enjoyed at the Klindt Cafe and following the dinner a business meeting and election of officers was held:

Dr. J. B. Pankau of Dalton was elected President for the ensuing year, Dr. Sinclair of Kimball as Vice President and Dr. Cooke of Sidney as Secretary and Treasurer of the Society.

The **Southwestern Nebraska Medical Society** met on November 23, 1937, in McCook. The following program was presented: "Some of the Newer Ideas of Endocrine Therapy," Dr. John C. Thompson, Lincoln: "Subdural Hematomas," Dr. K. S. J. Hohlen, Lincoln. Dr. F. J. Premer of Benkelman presided.

The **Adams County Medical Society** met at the Hastings State Hospital at Ingleside, December 1, 1937. Dr. Juul C. Nielsen, Superintendent of the hospital, was elected president; Dr. Leonard Swanson, Hastings, vice-president; Dr. Wilfred L. Shaw was re-elected secretary-treasurer and named delegate to the state convention. Dr. H. S. Andrews of Minden is the alternate delegate.

The doctors and wives heard Dr. J. Warren Bell of the State Health Department, division of maternal and child health, on the functions of his department in its relation to county and district medical societies. The meeting ended with a motion picture.

At the regular meeting of the **Scotts Bluff County Medical Society,** Dec. 9, the following officers were elected for 1938: President, E. E. Griggs; Vice President, G. W. Pugsley; Secretary-Treasurer, M. F. Schafer. Board of Censors: Three year term, J. N. Stoops; one year, W. C. Harvey (to fill the unexpired term of J. M. Collins). Delegate, G. W. Pugsley, Bayard; alternate, C. R. Watson, Mitchell.

The **Tri-County Medical Society** met at Fremont December 1, in the Hotel Pathfinder. Fifty physicians and their wives were present. The meeting was addressed by Dr. James M. Thomson of Lincoln and Dr. Herman F. Johnson of Omaha.

The **Madison Six County Medical Society** met on the 2nd of December at the Norfolk State Hospital. The meeting was addressed by Dr. Norman Reider of Topeka, Kans., on headaches, and Dr. Richard F. Richie of Lincoln, on Child Welfare work in Nebraska. Dr. George Charlton of Norfolk presided. Members of the Board of Control attended the meeting.

Secretaries of Societies are requested to forward minutes of the meetings to 507 Medical Arts Bldg., Omaha, Nebraska.

AUXILIARY NEWS

On November 1, Mrs. David Hilton was hostess to the Lancaster Auxiliary and there was a very gratifying attendance. Mrs. Earl Farnsworth, State President, and Mrs. J. E. Gelow of Grand Island, were out-of-town visitors. The talk by Dr. D. G. Griffiths of the State Hospital, on "Our Responsibility to the Mentally Ill," was greatly enjoyed.

The Auxiliary has promised to provide workers for the Tuberculosis Seal campaign here in Lincoln.

* * * * * *

Following a dinner given at Ord for Dr. Falls, of Chicago, Ill., and Dr. Bell, of Lincoln, who were guests of the Four County Medical Society, a special meeting of the doctors' wives was held at the home of Mrs. C. J. Miller of Ord. Mrs. E. E. Farnsworth of Grand Island, President of the Woman's Auxiliary to the Nebraska State Medical Association, and Mrs. J. E. Gelow, State Chairman of Program and Health Education, were present to assist in the organizing of an auxiliary to the Four County Medical Association. The auxiliary was organized and the following elected to office: Mrs. Hempil of North Loup, President; Mrs. C. J. Miller of Ord, Vice President; Mrs. Roy S. Cram, Burwell, Secretary and Treasurer. The next meeting of both groups will be held in Burwell December 2, Dr. and Mrs. E. J. Smith and Dr. and Mrs. Roy S. Cram as hosts.

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The Auxiliary to the Lancaster County Medical Society have appointed a special committee consisting of Mrs. E. S. Wegner, Mrs. E. W. Hancock, Mrs. Fred Teal and Mrs. E. V. Wiedman, to push the project of A. M. A. broadcasts for Junior and Senior High schools. The chairman, the county president, and a representative from the Medical Society met with the Superintendent of City Schools, Mr. M. C. Lefler, and were encouraged by his most favorable attitude to do all he could to help us to arrange a workable plan for the Lincoln Schools if possible. The visit of Dr. W. W. Bauer in Lincoln was responsible for this action.

—Mrs. C. Fred Ferciot,
Press and Publicity.

HUMAN INTEREST TALES

Dr. R. T. Fitzgerald of Imperial has moved to Denver.

Dr. Paul J. Heidrick of Wilber has moved to Lincoln.

Dr. Alden Hanson of Scottsbluff is at Rochester, Minn.

Dr. L. G. Hahn has moved from Cedar Bluffs to Fremont.

Dr. Nora Fairchild of Seattle was a recent visitor in Omaha.

Dr. R. H. Easton of Lincoln has located in Bennett, Nebr.

Dr. Gene Springer formerly of Bridgeport has moved to Mitchell.

Dr. G. A. Heath of Fairbury was ill with lobar pneumonia recently.

Dr. and Mrs. F. J. Embick of Laurel visited at Madison, Wis., with relatives.

Dr. Melvin Binger of Rochester, Minn., was recently a visitor in Dorchester.

Dr. D. H. Morgan of McCook addressed the Chamber of Commerce recently.

Dr. Wm. Robertson, formerly of Lodgepole has recently settled in Hemingford.

Dr. Hubert Green recently of the U. S. Army hospital, has located in Scribner.

The P. T. A. of North Platte is sponsoring a diphtheria immunization campaign.

Dr. I. C. Munger addressed the Woman's Club of Lincoln on Children's Diseases.

Sons were born to Dr. Harold Gifford and to Dr. Clayton G. Weigand, both of Omaha.

Dr. D. M. Alderson of Denver has become associated with Dr. H. J. Wertman of Milford.

Dr. O. D. Johnson, Kearney, Nebr., addressed the Cosmopolitan Club members on Syphilis.

Dr. R. J. ODonnell of Columbus addressed the nurses' club the latter part of November.

Dr. W. Stanley Musfelt, formerly of Geneva and Ohiowa, Nebr., has moved to San Diego, Calif.

Dr. M. F. Anderson, formerly of Omaha, is now associated with Dr. L. Abbott in Sidney, Nebr.

Dr. C. Pinkney, for some years a medical missionary in Java and India, has located at University Place.

The engagement is announced of Dr. Walter C. Graham of Dakota City to Miss Lucille Reader of Omaha.

Dr. Dora B. Eckles recently lectured on venereal disease before the York high school girls and their mothers.

Dr. E. G. Zimmerer of the state department of health talked before the P. T. A. of St. Paul on syphilis.

Dr. F. M. Kueffer of Culbertson is spending the winter in Florida. Dr. C. W. Dewey has taken over the office.

Dr. R. T. Van Metre, city physician, Fremont, recently spoke on Public School Health at a meeting of P. T. A.

Dr. John F. Allen was chosen Medical Director to the Board of Control for the Kearney State Tuberculosis Hospital.

The removal of Dr. Duaine Doan from Doniphan, Nebr., to Salem, Mo., leaves the town without a resident doctor.

Dr. F. W. Scott, formerly of the Veterans Hospital in Lincoln has been transferred to the Veterans Facility at Reno, Nev.

Dr. H. C. Bumpus of Pasadena, Calif., was guest speaker before the Lancaster County Medical Society at its recent meeting.

The Town Hall of Lincoln was addressed on December 1st by Dr. Victor Heiser, author of An American Doctor's Odyssey.

Dr. Alfred Brown, Omaha, was elected treasurer of the Western Surgical Association at its recent meeting in Indianapolis.

Dr. J. D. McCarthy addressed the Young Business Men's Association of Omaha on the Importance of the Periodic Examination.

Dr. J. M. Willis of McCook was appointed to the Red Willow Board of Insanity Commissioners replacing the late Dr. Z. L. Kay.

Dr. C. C. Tomlinson, Omaha, talked on Syphilis in the town hall at Ralston; the meeting was sponsored by the Junoir Woman's Club.

Dr. John O. Milligan has moved from Scribner to Tacoma, Wash., where he will be resident physician in the county and city hospital.

The Nebraska State League of Nursing Education was addressed by Dr. Miles J. Breuer, Lincoln, on the subject of Childhood Tuberculosis.

Dr. Donald P. Watson, formerly of Los Angeles, California, has located in Grand Island in association with his father, Dr. E. A. Watson.

Dr. W. P. Wherry, Omaha, received a gold watch, which is the first distinguished service award given by the American Academy of Opthlomology and Otolaryngology.

Dr. R. L. Schroeder is moving to Alhambra, Calif. Dr. Geo. T. Alliband who has been associated with Dr. Schroeder will take over the entire practice of the Osceola office.

Dr. Floyd S. Clarke addressed the Hall County P. T. A. in connection with a refresher course held in Grand Island, at which Dr. Clarke and Dr. F. Falls of Chicago were speakers.

A surgical case was stolen from the parked car of Dr. Paul B. Schaefer of Columbus. A week previous prowlers picked the lock of the doctor's office, taking several other items with them.

Dr. Bryan M. Riley was elected President, Dr. Rodney Bliss was chosen President-elect of the Omaha Midwest Clinical Society. Dr. J. D. McCarthy was re-elected secretary-director of clinics.

The Medical Publishing Co. was incorporated with offices in Omaha. The officers are: President, Rebecca M. Show; Secretary-Treasurer, Vern S. Meade; Managing Director, Dr. James T. Maxwell.

Among Nebraska physicians recently returned from a European trip are Dr. and Mrs. W. C. Bartlett of Alma, Dr. J. A. Henske and his family, and Dr. and Mrs. P. Romanek of Omaha, and Dr. and Mrs. Julius A. Weber of York.

Dr. Homer Davis, President-elect of the Nebraska State Medical Association, addressed a lay group at McCook on December 16. The talk was under the auspices of the Kiwanis Club, and included members of several of the luncheon groups in McCook.

Drs. W. H. Hamsa and Richard Young of Omaha, together with 12 physicians and 16 nurses from four southeastern Nebraska counties, conducted a clinic under the auspices of the Elks Crippled Children program at Falls City the latter part of November.

Dr. D. G. Griffiths, Superintendent of the State Hospital, Lincoln, recently told a group of nurses and others interested in public health, that 50% of all crimes are committed by people suffering from feeblemindedness and other mental disorders. As a cure, he suggested sterilization of this group of criminals.

It is reported that Dr. Frank Hamilton of Friend, Nebr., is responsible for the capture of two escaped convicts. The doctor recognized one of the convicts and after placing him on the treatment table, Dr. Hamilton quietly slipped into another room and telephoned Warden Joseph O'Grady at the penitentiary in Lincoln. The convict was suffering from diabetes and had gone to the office for an insulin injection.

PRIMARY TULAREMIC ULCERS IN PHARYNX

F. H. McGovern, University, Va. (*Journal A. M. A.*, Nov. 14, 1936), reports a case in which the primary tularemic lesion was located in the pharynx. The clinical course was typical of tularemia; there was no evidence of a primary lesion on any part of the body other than the posterior wall of the pharynx and no other than cervical adenopathy was present. A positive agglutination for Bacillus tularense was obtained in the third week of the disease in dilutions up to 1:1,280 in three separate laboratories. On direct questioning a history was obtained of picking ticks from the ears of the patient's pet dog and crushing them between her fingers one week before the sudden onset of sore throat and high fever. The infection was evidently carried to the mouth on fingers that had crushed infected dog ticks. Francis also believes that this is the probable mode of infection. If the organisms can be carried on the fingers to infect other parts of the body, it can probably also be carried to the pharynx. The eating of improperly cooked infected food is another way in which a primary lesion may occur. The relief of pharyngeal discomfort achieved by the 1 per cent mercurochrome spray is of interest in view of the report by the Camps on the intravenous use of mercurochrome. The result with arsphenamine could not be evaluated because of the inadequate dosage. The possibility of the disease in the pharynx should be borne in mind in districts such as Virginia, where tularemia is prevalent.

STREPTOCOCCIC SEPTICEMIA COMPLICATING PNEUMOCOCCIC LOBAR PNEUMONIA

In eight cases of streptococcic septicemia occurring generally as a late complication of pneumococcic lobar pneumonia, Saul Solomon and Theodore J. Curphey, New York (*Journal A. M. A.*, Jan. 16, 1937), discovered that seven were caused by Streptococcus haemolyticus and one by Streptococcus viridans. The diagnosis of this complication is arrived at largely by a process of exclusion in which careful physical examination, roentgenologic evidence and thoracentesis are employed to rule out empyema or recrudescence of the pneumonia. Of diagnostic aid is a sudden increase in leukocytosis accompanied by an appreciable "shift to the left" of the Schilling count. The diagnosis is established by the finding of the organism in the blood culture. The prognosis of this infrequent complication is poor except in cases showing minimal transient bacteremia, in which recovery may occur. The rarity of this complication is in the author's opinion more apparent than real and stresses the need for more frequent cultures of the blood in unexplained pyrexia following crisis in pneumococcic pneumonia. In considering the streptococcus as a secondary invader in pneumococcic lobar pneumonia, it must be borne in mind that this organism may manifest itself either by a local pulmonary complication or a systemic blood stream invasion.

The patient: "Doctor, I snore so loudly I wake myself up."

The Doctor: That's easy to overcome. Sleep in the next room."

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THE ELECTRO-COAGULATION TREATMENT FOR INOPERABLE CARCINOMA OF THE RECTUM

WARNER F. BOWERS, M. D., M. S.,

Teaching Fellow in Surgery, Department of Surgery of the University of Minnesota, Minneapolis.

The patient with inoperable carcinoma of the rectum is doomed to pain and discomfort which even drugs and a well-functioning colostomy cannot completely relieve. Electrocoagulation, in selected cases of this type not only gives relief of pain and discharge but may obviate the necessity for a colostomy and may prolong life by slowing the local growth and inhibiting metastasis.

Kolischer first introduced the cauterization of rectal carcinoma in Chicago in 1910. Strauss in 1913 began to use the method and since that time he has been quite enthusiastic in its use. This form of treatment has not attained general recognition, however, largely because of unfortunate publicity and unwarranted claims for it. Too much has been expected of the method.

Bettman(1), Kolischer and Strauss(2) feel that electrocoagulation acts not only by destruction of the local lesion but that it liberates an antibody or carcinolytic agent which inhibits further growth of the tumor. Thus, they say, it is not necessary to destroy the entire tumor and they present cases which seem to show that partial destruction of the tumor has been followed by complete regression. A more logical and acceptable theory is that in healing after cauterization, a large amount of new fibrous tissues is formed converting a medullary into a scirrhous carcinoma well walled off by connective tissue and consequently less rapid in its growth. This fibrosis also may inhibit metastasis by the walling off process. Our series of biopsies, however, does not bear out this theory. Tumors which were graded, were called adeno-carcinoma grade three on each succeeding biopsy and subsequent cauterizations did not change the histological picture demonstrably. It is our impression that the highly malignant tumors continue to grow rapidly, even after cauterization and require cauterization again in about three weeks whereas tumors of lower malignancy seem to respond better simply because they are more slow-growing. Recurrence, then, is related to the inherent qualities of the tumor rather than to the type of treatment.

INDICATIONS

Strauss(3) first used the cauterization method only in inoperable cases of carcinoma of the rectum but as his enthusiasm increased, he widened the application of the method until now he treats nearly all carcinomata of the rectum by electrocoagulation. In general, Johnson(4) and others feel that cauterization should be reserved as a palliative procedure in inoperable cases. Cauterization can be used in the majority of cases where radium or x-ray therapy might be indicated. The distressing sequellae of radiation therapy are obviated, the symptoms are alleviated immediately and with cauterization one can determine immediately just how much has been accomplished without waiting six weeks as is necessary following irradiation. Electrocoagulation is most useful in removing large cauliflower growths which mechanically block the lumen of the bowel but Fansler(5) lists the following types of cases as suitable for coagulation. 1. Early lesions, of low grade malignancy, either pedunculated or sessile. 2. Cases where age or other organic defects contra-indicate extensive surgery. 3. Inoperable cases with distressing symptoms such as pain, mucous discharge from the rectum, hemorrhage from the tumor, intestinal obstruction, tenesmus or sensation of a mass in the rectum. In most cases colostomy is not necessary and this in itself will commend the method to most patients.

Patients for electrocoagulation of rectal carcinoma should be selected carefully. In order to employ this method with safety to the patient, the lesion must lie below the peritoneal reflection, because of the danger of subsequent necrosis, slough of bowel tissue and development of peritonitis. Again it should be emphasized that all operable cases should be given the advantage of extensive excision.

INSTRUMENTS

An elaborate instrumentarium is not necessary in employing cauterization for carcinoma of the rectum. Fansler uses a Bakelite anoscope 1¼ inches in diameter but any short, lighted proctoscope is satisfactory. Suction is desirable to remove the smoke from the operative field and a special protoscope with built-in suction tube may be had. Henschen(6) uses an instrument which is inserted past the site of the lesion. This instrument then expands like an umbrella and is used to apply traction to pull down the lesion for cauterization. However, such a procedure is not necessary. In addition to the proctoscope, a surgical diathermy machine which delivers a coagulating current is required.

PLAN OF TREATMENT

There are a number of courses which may be followed in employing cauterization for rectal carcinoma. In most instances, it is possible to cauterize the lesion without the necessity of establishing a colostomy. This is applicable in cases of partial obstruction where proximal distention of the bowel is not a factor. In cases where there is complete occlusion of the lumen with symptoms of intestinal obstruction and distention, some type of decompression is necessary before cauterization can be used. In these cases a temporary or premanent type of colostomy should be established. This not only relieves obstructive symptoms but decreases trauma to the lesion and often is followed by diminution in the size of the lesion due to regression of edema and inflammation. A temporary colostomy may be made in cases where successful re-establishment of the lumen is assured or in cases where the proctoscope is to be introduced through the colostomy for purposes of cauterization. Strauss feels justified in combining surgery and cauterization in some cases and he does not hesitate to split the anal sphincter in order to obtain better exposure for cauterization.

The surgeon must decide whether he expects to use the method of total or fractional cauterization. In total cauterization, an attempt is made to destroy all of the tumor in one sitting while in fractional cauterization, an adequate lumen is established by coagulation and the patient then is frequently examined and when stenosis again is present, further cauterization is done. This type of procedure can be employed even in patients who are very poor operative risks due to advanced age or some other organic condition.

OPERATIVE PROCEDURE AND FOLLOW-UP CARE

Preoperative preparation is relatively simple, nothing but a clean lumen for accurate visualization of the tumor being required. In cases of partial obstruction many enemata may be required because of the tendency of the fecal material to pass through the stenosed lesion in very frequent small amounts. This is a great handicap during the operative procedure and makes the operation much more dangerous in-as-much as vision is obscured. The enema fluid should be evacuated completely for the same reason. Instillation of some so-called antiseptic solution into the rectum is practised by some authors but this is not necessary and usually hinders the operation by obscuring the color differentiation between normal mucosa and tumor tissue.

The administration of an anesthettic for these operations is no more necessary than it is for an ordinary proctoscopic examination except that the patients complain of the local heat. Strauss controls this by local application of a cone shaped piece of ice. In this series, 12 of the 21 operations were performed without an anesthetic. However, we have found it more satisfactory to have the patient placed in a sitting position and then to give a low spinal injection of 50 mgm of novocain crystals dissolved in not more than 2 cc of spinal fluid. The patient remains sitting for 2 minutes following this and then is placed in the Kraske position. The proctoscope is introduced, a biopsy is taken and then cauterization of the tumor is done. According to Fansler, the current should be so adjusted as to produce coagulation 1 to 1.5 cm from the point of contact. One may grasp masses of tumor tissue with a forcep and apply the electrode to the forcep handle or directly apply the electrode to the tumor tissue and curet away the charred tumor. In the fractional method, it usually is sufficient to destroy enough tumor to allow free passage of the proctoscope through the area stenosed by the tumor. It is to be remembered that there is additional loss of tissue during the convalesence due to necrosis and slough from heat developed at a distance from the electrode. For this reason, one should cauterize less than actually seems to be required in order to obviate perforation. In one patient in this series, such a slough did develop three days after cauterization and the patient died one week later, of peritonitis.

Post-operatively the patient is given a soft diet and mineral oil. Enemata should be forbidden due to the danger of hemorrhage or perforation. No digital examination should be made for the same reason. The patient should be kept in bed until the temperature is normal, this usually requiring 4 to 7 days. The patient then is dismissed from the hospital and warned of the possibility of secondary hemorrhage. Some authors begin potassium permanganate or boric acid irrigations of the rectum on the tenth post-operative day to diminish discharge but this is not our custom. In this series, for the 21 operations, the hospital stay varied between 2 and 10 days, the average being 4 days. Cauterization by the fractional method usually suffices to give easy evacuation for about 3 weeks and digital examination then will demonstrate whether or not subsequent cauterization will be necessary. Frequent follow-up examinations should be made in order to cope with recurrence or metastasis.

COMPLICATIONS

There are a number of post-operative complications which may be anticipated. Fever, of course, almost always follows and is due to the local tissue necrosis. It may remain as high as 102 for several days, without serious import, if there are no signs of peritonitis. In this series, the highest post-operative temperatures and pulse rates for the 21 operations were examined. The highest temperature was 104 and the highest pulse rate was 140. The average post-operative high temperature and pulse rates were 100.6 and 102. There usually is a bloody, mucous discharge containing small masses of sloughed tissue and lasting for 10 days to 2 weeks. If there is an offensive odor, it may be controlled by permanganate irrigations. If the lesion is anteriorly situated, urinary retention may be present for several days, espescially,if the patient be a male. Hemorrhage, due to secondary separation of the charred tissue may be expected any time within the first 2 weeks. In Strauss' series of 42 cases, 5 had severe hemorrhage on the tenth to twelfth post-operative day, requiring packing for control. This procedure usually suffices but cauterization of the bleeding point may be necessary. Two of our patients had hemorrhages after returning home but due to the tendency of untreated cancer to hemorrhage, it is difficult to determine how much significance to attach to it. Another possible complication is ischio-rectal abscess or osteomyelitis of the sacrum. Strauss reports 2 deaths a year after cauterization due to sepsis from infection of the sacrum. This develops from perforation of the extra-peritoneal portion of the bowel. Paralytic ileus may develop and gives cause for alarm as it means peritonitis until proven otherwise. Treatment should be by nasal suction, abdominal hot packs and paraoral fluids. Perforation of the extra-peritoneal bowel is evidenced by abscess formation and of the intra-peritoneal bowel by peritonitis and pneumoperitoneum. X-ray films of the abdomen with the patient in a sitting posture often will demonstrate free gas under the diaphragm. Strauss(7) states that he often sees a fibrous stricture at the point of previous cauterization and for this complication he does a posterior excision of the scar with end-to-end anastomosis.

MORTALITY AND END RESULTS

Naturally, it is discouraging to speak of results in this group since all of the patients are inoperable and so doomed to a cancer death. However, Strauss(3) reports survivors as follows; one for 7 years, two for 6 years, seven for 5 years, nine for 4 years and twelve for 3 years or less. Johnson(4) reports five survivors, ranging from 1½ to 7½ years. These figures make the end result less hopeless and make the procedure seem to be of definite value. In our series, only hopelessly inoperable cases have been treated by cauterization so that of the 9 patients treated, since 1935, already 6 have died. These patients lived an average of 6 months after the last cauterization. One patient was kept alive almost a year by repeated cauterizations and without a colostomy. The 3 survivors have permanent colostomies with very slow-growing tumors.

The number of treatments in each case will vary with the malignancy of the tumor and with the thoroughness of the cauterization. Johnson reports 8 cases with 14 operations. In Strauss' series, 19 patients had 1 treatment, 11 had 2, 7 had 3, and 5 had 4 cauterizations. In this series, 3 patients had 1 treatment, 4 had 2, 1 had 4 and 1 had 6. The youngest patient was 39, the oldest 80 and the average was 63 years. In the 3 patients for whom permanent colostomies were established, there were no metastases after 2 and 3 years and cauterization was done, therefore, in the hope of slowing the tumor growth still further. In the other 6 patients, cauterization was done because the patients refused colostomy. In every case the patients experienced marked benefit from cauterization. One patient was relieved of a bloody, mucous discharge, another of pain, bleeding and constipation, another of very frequent stools, another of gas pains and intestinal obstruction and another of a sense of fullness in the rectum and extreme pain on sitting down. These individuals regained a relatively normal bowel habit and were free of pain.

It seems safe to draw the following conclusions.

1. Cauterization, if employed in selected cases, relieves the pain and discomfort attending inoperable carcinoma of the rectum.

2. The procedure often obviates the necessity for establishment of a colostomy and so commends itself to the patient.

3. Cauterization may be used in patients who cannot tolerate wide excision and multiple stage procedures may be done if required.

4. The procedure is simple and satisfying if ordinary skill and common sense are employed.

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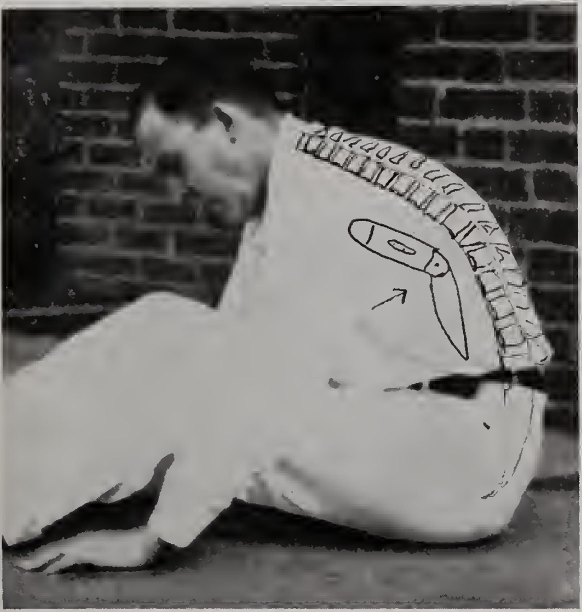
MORTALITY FROM CESAREAN SECTION IN INDIANAPOLIS AND THE CENTRAL STATES

According to David L. Smith, Indianapolis (*Journal A. M. A.,* April 17, 1937), from Nov. 1, 1927, to Nov. 1, 1928, in four Indianapolis hospitals, the maternal mortality accompanying cesarean sections was 11.3 per cent. In 1934 the mortality rate fell to 4.8 per cent. The rate for the classic technic was 5.1 per cent and for the low cervical it was 4.3 percent. In 1935 in the same four Indianapolis hospitals the maternal mortality decreased to 3.2 per cent, the rate for the classic operation being 3.9 per cent, while that for the low cervical was 1.8 per cent. Data have been presented representing the cesarean section practice, preference and technic of 153 members of the Central States Association of Obstetricians and Gynecologists. Sixty-three of these members reported 5,393 cesarean sections with a maternal mortality of 1.4 per cent and a fetal mortality of 2.52 per cent. Of these 5,393 operations 1,504 were classic cesarean sections with a maternal mortality of 2.85 per cent, and 3,889 were low cervical cesarean sections with a maternal mortality of 0.84 per cent. It is apparent from a study of the Indianapolis work and that reported by the members of the Central States Association of Obstetricians and Gynecologists that the low cervical section is the operation of choice.

EMERGENCY TREATMENT OF FRACTURES OF THE SPINAL COLUMN

J. E. M. THOMSON, M. D.,
Lincoln.

Fracture of the body of a vertebra is the result of compression between the bodies above and below, with the trunk flexed forward on itself, or jackknifed. The anterior portion of the bodies of the vertebrae that receive the major strain and force are crushed, or buckled, so to speak, losing their normal contour to become wedge-shaped; this wedging varying in degree in direct relation to the amount of pressure or compression exerted. Torsion and twisting, secondary forces, may cause fractures of the articular facets, laminae and processes, resulting in dislocations of portions of the vertebral structure, and at times injury to the spinal cord. The lower cervical and dorso-lumbar regions are the most frequent sites of fracture, as they are the most flexible regions in the spinal column. More than one vertebra may be fractured. Such multiple fractures may be in adjacent bodies, or they may be separated.



No. 1. Jack-knife injury with compression of vertebra.

DIAGNOSIS

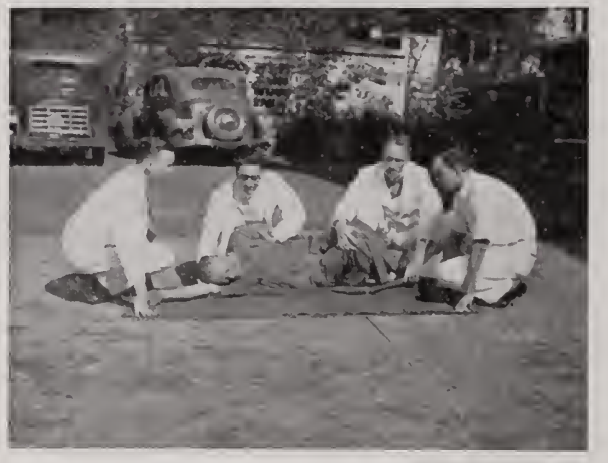
The history of a fall from a height, an air or auto accident, a direct crushing force upon the shoulders, or a sudden force in the form of a jerk, twist or pull, delivered through the arms while lifting or pushing, as well as direct violence to the trunk or back, should cause one to suspect a fracture of the vertebra. Evidence of kyphosis, deformity or local violence, pain and tenderness in the back, added to a suggestive history, should make one extremely suspicious of a fractured vertebra. Accompanied by paralysis the evidence is quite conclusive, but fortunately this complication is not a frequent occurrence. However, a thorough neurological examination should be made of every suspected fracture of the spine. X-rays in the antero-posterior, preferably stereoscopic, and lateral positions should be taken of every suspected fracture, as only by a roentgenogram with good bone detail, can accurate diagnosis be made. Often oblique x-rays are of value in diagnosing fractures and deformities of the articular facets and laminae.

EMERGENCY TREATMENT

The same basic principles with respect to treatment of fractures of the long bones apply to treatment of fractures of the spine. The intelligent recognition and first aid handling of patients with fractured spines, or those suspected of having such an injury, bears a direct relation, in many instances, to the ultimate result, the amount of disability, and the ability of the patient to again assume his former occupation. Since jackknifing of the trunk may increase the deformity and cause increased cord injury, the patient must not be allowed to assume a sitting position or be lifted by the shoulders and legs, as this would tend to increase the deformity. The patient should be drawn or rolled to the prone position on his face, with his hands above his head, and drawn on to a firm litter or board. If it is necessary to lift the patient the blanket lift is accomplished by tucking the blanket against the body and then rolling the patient on to his face. Four men, two on either side, grasping the blanket at the ends and in the middle, can keep the patient's trunk in the same plane or slightly hyperextended, during the lift or carry to the stretcher or board on which the patient is to be transported. Once established on the transportation litter he should remain there until a diagnosis is made, and not be moved to a bed and then transferred several

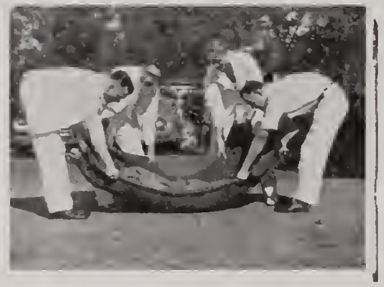
No. 2. Wrong lift increases jack-knife.

times to carts for x-ray, as multiple handling might increase the deformity. Shock should be treated immediately. Early reduction of the fracture with hyperextension and traction, and immobilization in a well-fitting plaster-of-paris body cast, or shell, should follow immediately and the patient treated in recumbancy. If the fracture is in the cervical region the head must be included in the cast; if in the lower lumbar, one leg should be included in a spica cast. If paralysis exists a plaster bed is essential. Laminectomy should not be considered until a complete neurological examination has been made, and there is positive evidence of pressure on the cord that can possibly be removed by operation. Laminectomy is seldom of value.



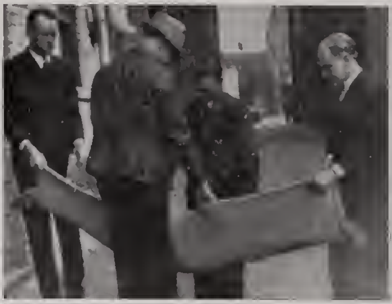
No. 3. "Blanket Lift." Don't try to straighten patient out. Roll him onto the blanket from the position he was found.

No. 4. Prone position on blanket.



No. 5. "Blanket lift" two men on each side.

6. Preparing to lift.



7. Two men on each side is a better lift.

8. On the cart.

OCCURRENCE OF RENAL CALCULI AND THEIR POSSIBLE RELATION TO DIET, AS ILLUSTRATED IN THE SOUTH AFRICAN NEGRO

Vincent Vermooten, Johannesburg, South Africa (*Journal A. M. A.*, Sept. 11, 1937), states that the South African Negro (Bantu) does not form renal calculi, as illustrated by examination of the hospital admission records of 1,091,000 Negro patients. Members of the white population of South Africa, as illustrated by the examination of hospital records of 126,000 admissions, form renal calculi in the ratio of one in 460 admissions. The South African Negro lives on a simple, stable and uniform diet. This diet is rich in vitamin A, has an acid ash base and is extremely low in calcium. Urinary stasis and infection have an important part in the formation of renal calculi. The efficacy of the administration of vitamin A should be checked regularly by studying the regeneration of the visual purple, so that one can be certain that it is available for assimilation.

COMPRESSION FRACTURES OF THE BODY OF THE VERTEBRA*

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By the very nature of the trauma that is responsible for compression fractures of the vertebral bodies, it is evident that they are becoming much more prevalent in recent years than they were in the past. This, with the multiplicity of treatments that have been advocated and the number of individuals remaining permanently disabled, prompted me to make this attempt to offer some sort of an understandable correlation of the whole entanglement.

In reviewing the literature of the past ten years, one thing was very striking. No author took the time to explain or to review the mechanism of the vertebral weight bearing and thereby explain, for instance, why compression fractures are caused by jackknifing, why they occur most frequently in the region of the 6th and 7th cervical, the last dorsal, and 1st lumbar vertebrae, and why hyperextension is used in treating these fractures. I will attempt to make such a review.

First let us review the anatomy of the spine from a purely mechanical point of view. You will observe that a lateral view of the spine shows four graceful curves—two with their convexity forward and two with their convexity back You will note that in the region of the 6th and 7th cervical, the vertebrae are standing in the position of a changed convexity, that is, they are in the middle of the vertical weight bearing line and that the spine at this point is changing over from a forward convexity to a posterior convexity. You will note that the same condition prevails in the neighborhood of the last two dorsal and 1st lumbar vertebrae. Here the spine is changing over from a posterior convexity to an anterior one. You will further note that the entire weight of the torso is in front of the spine; that is, you have a stem carrying a load and the load is all suspended on one side of the stem. Naturally the tendency in the event of falling and alighting on the feet or on the buttocks, this weight all being in front of the spine, is necessarily going to produce a tremendous effort toward bending the spine forward.

Now taking up the individual vertebra you will note here that each vertebra superimposed upon the one below it beginning at the sacrum and continuing up to the occiput rests definitely on three points just like a three-legged stool —the front leg of the stool representing the body of the vertebra and the two posterior legs of the stool representing the articular facets. Now any sudden flexion of this stem beyond normal limits must necessarily result in one of two things. Either the front leg of the stool must collapse or the two posterior legs be lifted from their base. Here the thing happens that happens always elsewhere in the body when excessive strain occurs—the weakest portion suffers. The body of the vertebra being rather loosely constructed, cancellous bone has not sufficient strength when acting as a fulcrum, as it does in the case of severe flexion of the spine, to cause a tearing of the interspinous ligaments together with overcoming the tremendously powerful back muscles; so instead of the two hind legs of the stool raising up, the one front leg of the stool goes down and you have a compression fracture of the body of the vertebra.

The etiology then of compression fractures of the vertebra, is acute sharp flexion of the spine and this may result from the sudden stopping of a vehicle, for instance, in which a patient is riding with his feet braced fixing his pelvis tightly in the seat. The sudden stopping of forward velocity will throw the torso forward sharply flexing the spine, the maximum strain taking place of course in the upper end of the free spine and the beginning of the barrel-like chest injuring the last dorsal or 1st lumbar, and the snapping forward of the head, most of the weight of which is again in front of the spine, will produce the injury at the upper end of this portion protected by the chest or in the neighborhood of the 6th and 7th cervical. Falling for some distance directly on the extended legs may produce fractures of the os calcis, of the neck, of the femur, or jackknifing of the torso with compression fracture of the spine. Falling heavily on the buttocks likewise will produce similar fracture although this particular type of fall, if the patient's spine is erect at the time of the impact, is more apt to produce fracture of the neural arch in either of the forward spinal curves, that is, the cervical or the lumbar.

The incidence of these fractures seems to be about the same in various reports. Bowman reporting a long series of cases in the British Journal of Surgery, 1929, stated that in his series the frequency of these fractures occurred in the following order: 1L, 12D, 2L, 11D, 5L, 5 and 6C.

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The symptoms I would place in the following order:

PAIN

Pain is obvious in all types of fracture but the absence of any particular distress is frequently noted especially in compression fractures of the body when they are placed at rest immediately following the injury.

TENDERNESS

Tenderness is a very important sign. In the presence of a history of sufficient injury and when sharply localized over one definite vertebra it is almost diagnostic. Tenderness due to injury of the soft parts is never so sharply nor so acutely localized as in the case of fracture. Crepitus of course is out of the question unless the fracture be in the neural arch. Excessive mobility is likewise not present. Kyphosis or sharp posterior convexity may be present if the collapse is sufficiently marked.

DISABILITY

Disability is sometimes complete. However, I would particularly stress the fact that many of these people are able to get to their feet immediately after the accident and move around without extreme discomfort. This is probably responsible more than any one thing for the frequency of unrecognized fractures of the body of the vertebra which prompted Lever F. Stewart to write an article about this subject stating that in the series of cases reported, 42% of the compression fractures of the body of the vertebra had not been recognized, some of these having been overlooked even by the roentgenologist.

Failure of any patient with a back injury to respond to a short period of rest and fixation of the back should arouse suspicion of a compression fracture. Localized immobility frequently locates the fracture. The vertebral column is flexible in bending backward, forward or sideways. Considerable range of mobility is noted through the entire verebral column even immediately after injury, but commonly a little later one notes fixation of the involved vertebra and immediately adjacent to it with normal or extreme compensitory mobility of the other vertebra. This is a natural and voluntary adaptation of the individual to the injury and enables him frequently to show considerable back motion without much pain. Discoloration is rarely seen. I question whether it is ever seen unless some portion of the neural arch is also fractured. Pathological fracture of the vertebral bodies is rare, occurring almost never except in tuberculosis and malignant metastasis.

The x-ray, of course, is the final evidence in making a positive diagnosis. In the lumbar and the lower cervical regions this is not difficult as one can procure excellent x-ray visualization in their lateral views. However, in the dorsal region from the upper to the lower limits of the ribs it requires much better x-ray technique and more roentgenological ability to make accurate diagnoses. Fortunately compression fractures of the body of the vertebra in this region, which is so thoroughly braced by the barrel stave-like ribs, rarely happen except they are associated with several broken ribs and perhaps a fracture of the sternum.

Just a word regarding the art of handling a patient on whom you make a diagnosis of a compression fracture or a diagnosis of a fracture of any other portion of the bony spine. Never use the term "broken back" in describing your diagnosis to the patient or to the family or friends. This term immediately strikes terror into the heart of the patient and sows the seed of a future neurosis. Instead you may explain to the patient that there has been an injury to the body of one of the vertebra; that it has been squeezed or pinched together and that it will repair in very much the same manner as does bone elsewhere in the body and that the treatment will be the same as that for fractured bones elsewhere.

TREATMENT

Here we find that the varieties of treatment are almost as plentiful as the articles that are written on the subject. Some of these go into great detail describing just what they do without ever mentioning what they are trying to accomplish and why. I might summarize the whole treatment in one sentence: If the spine is placed in a position so that the weight is taken off of the front leg of the stool and placed on the two back legs of the stool in the manner of a person sitting on a three-legged stool and leaning back and kept there for from ten to twelve weeks, the pathology is cured.

This end is accomplished in two general manners, by open reduction and by the closed method. I will first discuss the open method because it is not so generally used and therefore is limited to fewer accomplishments. The two operations most popular among surgeons who lean to the open method are the Hibbs and the Albee. It is not within the scope of this paper to discuss the techniques or the merits of either of these operations further than to say that they both aim at internal fixation of the spine in such a manner as to remove the weight from the body of the vertebra or the front leg of the stool and cause it to be carried entirely by the articular facets or the two posterior legs of the stool, with fixation in plaster of Paris sufficiently long to affect this fusion which is twelve to sixteen weeks. The proponents of this type of treatment maintain that the period of disability is lessened due to the fact that they obtain ready permanent fixation in a shorter period of time and that the patient does not suffer as much atrophy and limitation of motion from disuse as by the closed method.

The closed method, which is much more generally used, is accomplished by various methods which suit the fancy and mechanical ingenuity of the men that use them. The Lorenz-Boelher method consists of resting the chest and folded arms on a fixed object and then raising the legs slowly and gradually until the thighs assume an angle of about 60 degrees above a horizontal plane or by leaving the thighs on a fixed object then proceed to raise the head and shoulders to a similar angle. They accomplish this with the aid of local anesthesia. Shaek uses the same method but is a little more emphatic in stressing the use of local instead of general anesthesia maintaining that immediate reduction by any method is dangerous under general anesthesia but not so under local.

Another method is by placing the thighs on one table and the chest and folded arms on another table which is between twelve to fourteen inches higher than the table upon which the thighs rest. This as you see is not in any way different from the Lorenz-Boelher method of leaving the thighs fixed while raising the head end of the spine.

Another method is by using the so-called hammock. The patient is placed face down on a tightly stretched narrow strip of canvas. Then by relaxing the tension of the canvas one allows the torso to sag and thereby hyperextend the spine.

None of these methods fulfill the requirements fully. Even under anesthesia, using any such method whereby one depends on the weight of the torso face downward to produce the hyperextension, you are sure to receive the very thing that was mentioned in diagnosis. You will remember we mentioned the fact that one of the diagnostic points was compensatory mobility of the spine above and below the site of injury, nature compensating by supplying necessary motion elsewhere than at the sight of fracture. That is what happens to a certain degree at least by any of these face-down suspension methods. Involuntarily the muscles at the site of fracture will remain rigid while those above and below relax giving you the optical illusion of having acquired excellent hyperextension while as a matter of fact you have not lifted the load off the front leg of the stool. The more positive method of acquiring hyperextension immediately at the site of fracture is one whereby the hyperextension is produced by upward pressure with the patient lying relaxed on his back.

There are two general means of accomplishing hyperextension in this manner. One is the fractional method and the other is the immediate. The fractional method is most generally accomplished either by placing the patient in bed with a canvas band transversely across his back at the site of fracture with either end of the band attached to a rope which traverses through a pulley attached to an overhead frame on either side and then sufficient weight applied to each end to gradually raise this section of the patient's back from the bed; or another very popular method is by using a Bradford frame which has a hinge in each of the side bars. The patient is placed on the frame with the site of fracture immediately opposite the hinges in the sides of the frame. The frame is then gradually buckled upward causing the patient's body weight to drape itself over the apex at the site of the hinges until satisfactory hyperextension has been accomplished after which the patient is placed in his plaster of Paris jacket.

Still another method of fractional reduction is to construct a plaster of Paris shell in which the patient lies and into which is placed additional thicknesses of felt pads immediately beneath the fracture until satisfactory hyperextension is accomplished.

Then there is the method of immediate complete hyperextension which is accomplished in the following manner. Place the patient on a regular Holly table with the sacrum resting on the sacral rest and the shoulders on the shoulder plate. Place an ordinary automobile jack immediately beneath the fractured vertebra being careful to pad well with at least three thicknesses of silence cloth on felt and then a new rubber heel. The patient's back is then elevated at this point until satisfactory hyperextension is acquired. The plaster of Paris jacket is then applied and the immediate treatment is completed.

In fractures of the bodies of the cervical vertebrae the mechanical principle is the same although accomplished in a somewhat different manner. Here we practically always use the fractional method of reduction by the use of traction with the neck being hyperextended over a roll or pillow, the Jury mask pulling on the chin or occiput, or the occipital and forehead band being used.

Haen advocates the use of skeletal traction which he accomplishes by placing wire (extra dural) through drill holes in the skull. This procedure seems like a lot of surgery to accomplish the end sought. In the first place it is rarely necessary and in the second place, (the only time I did have to resort to skeletal traction was on account of a wound that practically scalped the patient from the occiput up) I found a much simpler method. I placed the sharp point of a clevis type of ice tongs into each parietal bone sinking it only through the outer cortex of the skull.

Now the jacket. The plaster of Paris jacket should be made well down over the pelvic bones to a level of the great trochanter and should extend up to the axilla on either side and well up to the clavicle in front for fractures below the 6th dorsal. I feel that fractures above the 6th dorsal and including all of the cervical vertebra should be supported up to the chin and occiput. If the patient objects too strenuously to having the front of the neck covered with plaster and the head held back by a chin support, one can relieve him of this discomfort by running the cast up to the top of the head behind and encircling the forehead, thereby holding the head back in hyperextension with a forehead band instead of a chin rest. After the jacket has been applied, one can trim the lower end sufficiently high behind and in front to enable the patient to sit up as these patients are permitted to be immediately ambulatory. Also trim it sufficiently at the arm pits to make it comfortable there. The entire front of the cast can be removed so long as that portion covering the upper end of the sternum and that portion across the pubis are kept intact and the back of the cast also kept intact.

One should constantly bear in mind the fact that to maintain proper hyperextension with complete relief from weight on the body of the vertebra or the front leg of the stool, it is only necessary to maintain three fixed points. One in the back immediately over the fracture holding the spine forward at that point, one below, and one above holding the upper and lower ends of the spine back. This plaster of Paris fixation I maintain for from ten to twelve weeks, dating from the date of the injury following which the cast is removed and a Taylor brace made which the patient wears during the day only. Immediately upon removing the cast the patient is given massage, setting up exercises which consist of bending forward, backward, laterally and rotation. During the entire period of treatment from the time the diagnosis is made until the exercises are begun, the patient is at all times kept appraised of the fact that he has merely another bony injury that we have every reason to believe will recover as bony injuries do, and that there is no reason to expect any prolonged convalescence or permanent disability. I feel that this is absolutely important because these patients are constantly mingling with people who still consider a broken back the end of all things the same as it was in the pre-x-ray days when broken backs were only diagnosed in patients who had spinal cord injuries. These patients should be able to overcome their disuse atrophies and soft tissue fixation in an additional ten to twelve weeks and return to their former occupation whatever it was within a maximum of six months.

Harry Mock writes in the International Journal of Medicine, 1933, that the period of disability from compression fractures of the body of the vertebra should not be more than six to eight weeks. Stallard writing in the Southern Medical Journal, 1935, is of the same opinion.

CONCLUSION

I have limited this paper entirely to compression fractures of the body of the vertebra excluding all complications such as dislocations, cord injuries, fractures of the neural arch, fracture of the processes, etc. I have reviewed briefly the popular manners that are in vogue for accomplishing the one and only means of treating these fractures.

Regarding hyperextension, I personally favor the immediate correction with the aid of the automobile jack, provided, of course, there is no fracture of the neural arch at the same level. In these cases use one of the face-down methods after two or three weeks of traction on a mildly elevated Bradford frame. My second choice is the fractional correction by upward pressure with the hinged Bradford frame. I can see very little if any reason for ever doing a fusion in a recent case. I would limit this open reduction method to cases that failed at resolution and to late cases including Von Kummel's disease. While I am unalterably opposed to long drawn out immobilization by cast or brace and insist on free movement after ten or twelve weeks, yet I can hardly agree with Mock and Stallard that six or eight weeks is sufficient. If we are to believe that Von Kummel's disease is the result of a so-called secondary absorption resulting from continued weight bearing on an undiagnosed fracture of a vertebral body, then we have every reason to believe that too early weight bearing on a diagnosed one might result in the same pathology.

SOME RECENT ADVANCES IN FEMALE ENDOCRINOLOGY*

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During the last few years several potent endocrine preparations have become available. In using these hormones in the treatment of functional menstrual disturbances the clinician has been impressed by an occasional almost miraculous result but unfortunately he has been more often disappointed by failure. The purpose of this discussion is to offer some diagnostic and therapeutic suggestions, based on recent advances in endocrinology, which will aid the clinician in sorting his cases and reducing the number of failures. Although these diagnostic measures will be discussed in connection with disorders of the flow and interval, they are equally effective in the study of other gynecological endocrine problems. These procedures will enable the clinician to plan a more rational therapeutic attack by directing his attention to the gland primarily at fault and will make possible a more objective study of the case and the results obtained.

Because of the complex glandular interrelationships, menstrual disorders may be associated with any type of endocrine dysfunction. For this reason an occasional brilliant result will be seen following the use of non-sex hormones such as insulin. Menstrual disturbances are not infrequently found among the constitutional manifestations of severe glandular upsets such as Graves' disease and Addison's disease, as well as unusual endocrine tumors including basophilic adenoma of the pituitary, tumors of the adrenal cortex, arrhenoblastoma and granulosa cell tumors of the ovary. This paper will be limited to the consideration of those cases in which the menstrual alteration is the principle indication of hormonal disturbance.

The first special diagnostic step in the solution of the endocrine riddle is the estimation of thyroid function. Although there is still much controversy as to the role and mechanism of the thyroid in reproductive processes, it is generally believed that hypothyroidism tends to be associated with menorrhagia and metrorrhagia. Hyperfunction, on the other hand, has a tendency to produce hypomenorrhea, oligomenorrhea and amenorrhea. The determination therefor of the basal metabolic rate and the blood cholesterol and the search for other signs of thyroid disturbance is extremely valuable. Lugol's solution and thyroid extract may be used as indicated. Some authors recommend the use of thyroid extract even in the presence of an apparently normal basal metabolism.

The second step is the estimation of ovarian activity. Of major importance is the fact that the gonad does not function under its own power but is entirely dependent upon the pituitary gland. Under the influence of the follicle stimulating hormone of the anterior lobe, the ovarian follicle develops during the first half of the menstrual cycle. As the follicle develops it secretes the female sex hormone estrogen (theelin, amniotin, progynon, folliculin) which can be detected quantitatively in the blood and urine. The tests are not as yet standardized and although they are occasionally a valuable aid in the differential diagnosis, they are not generally available because of the extensive laboratory facilities required.

In general the ovarian follicular hormone is responsible for the growth of the genital tract, the breast, and the secondary sex characters. The examination of these structures obviously may give some insight into ovarian function. Normal sized organs and normal sex characters suggest normal ovarian activity. Any underdevelopment of the sex structures suggests an ovarian deficiency. The findings, however, vary with the degree and duration of failure and the age of onset. An atrophic or hypoplastic uterus when associated with normal sex characters suggests an end organ defect rather than an ovarian deficiency. This defect may date from a previous ovarian deficiency which has subsequently undergone spontaneous correction. The uterus, due to excessive atrophy, has failed to respond and has remained insensitive to the now normal amounts of estrogen. Thus we understand the importance of early treatment of amenorrhea. The uterus can usually be built up by the use of large amounts of estrogen and not infrequently the associated menstrual disturbances are corrected. However, unless there is a functioning ovary to maintain the uterus at its new growth level atrophy will recur when treatment is discontinued. Thus examination of the sex organs and characters is an aid in estimating the present and past status of ovarian activity.

The next step in the estimation of ovarian function is the study of endometrial histology. This is one of the most practical methods of study of ovarian activity and is now within the reach of all. With the new uterine biopsy curettes, of which there are several types (suction, punch and cup), it is possible to obtain endometrial specimens in the office without the use of anesthesia and with little or no pain to the patient. The contraindications are pregnancy and infections of the lower genital tract.

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The endometrium is controlled by the two ovarian hormones, estrogen and progestin. Experimentally the administration of large doses of estrogen to a castrate female causes the endometrium to proliferate and within a few days following the cessation of treatment, bleeding occurs. However, if progestin is administered the endometrium is transformed into a secretory type and bleeding does not occur until progestin therapy is discontinued. The endometrium being controlled by the ovarian hormones, reflects the phase and degree of ovarian activity. During the first half of the normal cycle estrogen produces a proliferative or non-ovulatory type of endometrium. After ovulation, progestin, secreted by the corpus luteum, transforms the endometrium into a secretory or ovulatory type. Then if fertilization and implantation do not occur the corpus luteum degenerates; hormone secretion ceases and menstruation occurs when the concentration of progestin in the blood falls below the bleeding level. Thus at any given time in the menstrual cycle the endometrial histology reflects a picture of what is going on in the ovary. A biopsy specimen obtained just before or at the onset of menstruation should be of the secretory type and any deviation from the normal indicates a disturbance in ovarian function.

When this same procedure is applied to menstrual alterations it is found that there is no single type of endometrium associated with either functional bleeding or amenorrhea. A secretory endometrium is indicative of a corpus luteum abnormality. A proliferative endometrium, on the other hand, or its exaggerated type the hyperplastic form is found when follicular activity is prolonged or excessive due to a failure of ovulation and corpus luteum formation. Whether amenorrhea persists or bleeding occurs with either type of endometrium, depends upon whether the concentration of the hormone in the blood falls below the bleeding threshold level. When ovarian hormone secretion is markedly deficient or absent, the endometrium remains atrophic. The majority of functional bleedings are associated with a proliferative or non-ovulatory type of endometrium while an atrophic endometrium is found in the majority of amenorrheas. Thus amenorrhea usually indicates a more severe degree of ovarian deficiency than does bleeding.

Given an inactive ovary it is then necessary to determine whether the failure is primary in the ovary or secondary to pituitary hypofunction. As previously stated, ovarian function is dependent upon the pituitary gland. The ovary in turn, through its follicular hormone, estrogen, exerts a regulating and depressing effect upon pituitary activity. When the normal brake is released by failing or absent ovarian function, the pituitary over-functions and increased amounts of follicle stimulating hormone are secreted. This latter hormone can be readily demonstrated in the blood and urine. The over-function, however, is not necessarily limited to the gonadotropic hormone. Frequently there is over-activity of other pituitary functions as well which accounts for such complications as hyperthyroidism, hyperadrenalism and diabetes.

As a rule these patients are nervous, emotionally unstable women with various neurocirculatory complaints, pathognomonic among which is the hot flush. These symptoms which are associated with a failing ovary may precede the menstrual disturbance. The latter may vary from amenorrhea to bleeding. Basal metabolism may be normal or slightly elevated and the specific dynamic action of protein is usually somewhat increased.

The success of therapy in ovarian deficiency depends upon the object to be achieved. Reestablishment of menstruation in severe ovarian failure is improbable. The futility of attempting to stimulate the refractory ovary with additional gonadotropic hormone is demonstrated by the presence of excessive amounts of follicle stimulating hormone in the blood and urine. Roentgen ray stimulation of the ovary is occasionally successful in certain selected cases. Estrogen replacement therapy is most beneficial in repairing the local atrophy and in relieving the symptoms of ovarian failure. The latter is achieved by depression of the anterior pituitary and reduction of the output of follicle stimulating hormone. Since the severity of the climacteric symptoms is roughly proportional to the concentration of the follicle stimulating hormone in the urine, treatment can be objectively controlled by study of the output of this hormone. Repeated examinations of the vaginal smear are also a useful objective measure of adequate therapy.

In those patients in which the ovarian dysfunction is secondary to pituitary failure, the clinical picture varies depending upon whether the failure is limited to the gonadotropic hormone or involves several functions. The menstrual alteration may be the only evidence of failure or there may be such complications as hypothyroidism and hypoadrenalism. Statural abnormalities, local pressure symptoms and visual disturbances may also focus the attention upon the pituitary. However, the majority of these patients complain of a gain in weight and obesity of the girdle type accompanied by scanty periods which gradually progress to amenorrhea. The casual relationship of the obesity to the menstrual disorder is uncertain. The sugar tolerance is usually increased and basal metabolism tends to be low. There is little or no increase in the basal metabolic response following the ingestion of a protein meal. The neurocirculatory symptoms of ovarian deficiency are rarely, if ever, seen when failure is primary in the pituitary. Periodic molimina is not infrequent and suggests some pituitary function.

Successful therapy in pituitary failure requires the reestablishment of pituitary function. General hygienic measures, balancing of the diet, reduction of weight, and the use of thyroid extract have been found useful. In certain selected cases Roentgen ray stimulation may be tried. Perhaps the most useful method of stimulating the pituitary by the hormonal route is by the administration of single large doses of estrogen repeated at monthly intervals. This method is based on the experimental finding that short term dosage has a stimulating effect upon pituitary gonadotropic activity, whereas inhibition is produced by long term dosage. Successful results have also been achieved by attempting to duplicate the normal hormonal cycle by the use of estrogen alone or combined with progestin.

The pituitary replacement therapy, even though pure gonadotropic hormones were available, would be of little permanent value unless the pituitary could be otherwise stimulated sufficiently to carry on function when replacement therapy ceases. The pregnancy urine hormone, Prolan B, has been widely used under the assumption that it is identical with anterior pituitary extract. Unfortunately, at least with the doses now used, this hormone does not stimulate the ovary and therefore success could not be expected in severe pituitary failure associated with an atrophic endometrium. Prolan B, rather, seems to have a depressing effect upon the ovary causing degeneration of the granulosa and thereby lessening the secretion of estrogen. It is probably because of this particular action that it has proven of value in those cases having a non-ovulatory or hyperplastic endometrium, especially the functional bleedings.

Since the majority of functional menstrual disorders are due to disturbances of the pituitary, ovary and thyroid, this paper has been limited to the discussion of these three glands.

Thyroid responsibility is readily determined by a search for signs of thyroid dysfunction and by determinations of the basal metabolic rate and the blood cholesterol. Therapeutic trials with thyroid extract are frequently useful.

Ovarian activity may be estimated by an examination of the sex organs and secondary sex characters; by a study of the endometrial histology; and by quantitative determinations of the blood and urinary estrogen.

Ovarian failure may be primary in the ovary or it may be secondary to pituitary hypofunction. When the failure is primary in the ovary, it may be recognized by the climacteric type of symptoms and the presence of excessive amounts of follicle stimulating hormone in the blood and urine. When the failure is the result of pituitary hypofunction, follicle stimulating hormone is not demonstrable in the blood and urine and the climacteric symptoms are rarely, if ever, found.

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THE MANAGEMENT OF INFECTION AND GANGRENE OF THE EXTREMITIES IN THE DIABETIC*

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The prognosis of surgical conditions in the diabetic has improved greatly since the advent of insulin—so much so that one often hears the statement that surgical conditions in the diabetic should be handled in the same way, and with the same results, as in the non-diabetic. However, surgical conditions of the extremities in the diabetic still present special problems, aside from those of diet and insulin. There is always the question of impaired circulation, over and above that of sclerosis due to the age of the patient. In addition, there is a certain indefinite, though none-the-less real, reduced resistance to trauma and infection, and a lessened tendency toward healing to which diabetic tissues are subject. Whether this is due to disturbed carbohydrate, fat, or protein metabolism is not clear but that it does exist, independent of disturbed circulation, seems certain.

Surgical lesions of the extremities in the diabetic may be roughly divided into two classes: those in which circulatory impairment and gangrene are primary, and those in which infection is primary. Since most gangrenous lesions become secondarily infected due to lowered resistance; and since most infective lesions are influenced by the associated impaired circulation, and may even be followed secondarily by gangrene, it is obvious that this division is not clear-cut and that both conditions may co-exist. However, it does help from the standpoint of treatment and prognosis to know which is primary and which is secondary. Let us first consider those cases of impaired circulation with gangrene of variable degree, and with or without secondary infection.

It is important, first of all, to determine the degree of circulatory impairment, independent of the extent of the gangrene, as the latter alone is no criterion for amputation or the level of amputation. Various complicated and technical methods have been suggested and used for testing the adequacy of the peripheral circulation, but most of these are difficult, time consuming and expenive. Furthermore, they are for the most part unnecessary for the proper diagnosis and management of these cases, as much simpler tests are available which serve the purpose.

APPEARANCE OF THE LOCAL LESION

Much can be learned by the appearance of the local lesion. A lesion (gangrene or infection, or both), which remains localized to one toe and shows no tendency for extension of the gangrene or spread of the infection through tendon sheaths, fascial spaces, lymphatics, or veins, must have a fairly adequate circulation proximal to the region of the lesion. On the other hand, spreading gangrene or infection is strong evidence of poor circulation proximally. For some unknown reason, such spread is more common from lesions involving the middle three toes than from those of the first and fifth toes.

PULSATION OF THE PERIPHERAL ARTERIES

The Oscillometer of Pachon may be used for this test but it is expensive and offers little over manual palpation. For comparison, both limbs should be tested, the femoral, popliteal, posterior tibial, and dorsalis pedis vessels being palpated. Of these, the dorsalis pedis is the most important clinically, being palpable in practically every normal individual. The posterior tibial is more difficult to palpate and less important clinically. Although good pulsation of the dorsalis pedis and posterior tibial arteries is a favorable sign, it does not preclude gangrene of a toe due to occlusion of a digital vessel. On the other hand, the absence of pulsation does not mean that gangrene is impending or that a lesion already present will spread—because an adequate collateral circulation may be established, far more important than that through the main trunks.

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That such a collateral circulation is often developed in diabetes is well known, and is the chief argument in favor of conservative management in some of these cases. Shields Warren (1930) has demonstrated two types of arterial lesions in diabetics: 1. Endothelial proliferation and fatty deposition leading to gradual occlusion, giving time for an adequate collateral circulation to develop. 2. Medial calcification with associated intimal changes leading to more sudden occlusion, giving little time for the development of collateral circulation. The former is the more typical diabetic type of sclerosis and obviously lends itself better to conservative treatment and minor amputation. The latter, on the other hand, the senile type, does not respond so well to conservative management, and major or high amputation is usually required. However, each case is a law unto itself and the management must depend on the findings in that case.

COLOR CHANGES

The extremity of good color, particularly if the color remains about the same in the elevated and dependent positions, is an extremity of good circulation, whether it is possible to palpate the main artery or not. The extremity, which rapidly assumes a death-like pallor on elevation, regains its usual color slowly after return to the horizontal position and becomes purplish red when dependent, is the seat of extensive circulatory disturbance. The level to which the abnormal coloration rises is an indication of the level of occlusion of the larger vessels or the level above which a good collateral circulation has been developed—since it requires either patent main vessels or a good collateral circulation to maintain normal color. Both sides should be noted for comparison.

SKIN TEMPERATURES

Although thermocouples and skin thermometers may be used, a sufficiently accurate indicator is the palm or, better still, the ulnar side of the hand. By running the hand distally from the thigh to the toes and comparing the two sides, a good idea of the skin temperature may be obtained. It is normal for the temperature to fall gradually as one proceeds distally, but a sudden change in temperature is of significance. A warm extremity is a sign of good circulation—open main vessels or a good collateral circulation. A cold extremity is a sign of poor circulation—blocked main vessels and poor collateral circulation. The level of sudden change in temperature is an indication of the level at which the good circulation gives way to insufficient circulation, and usually parallels the level of color change.

The x-ray is chiefly of value in determining the presence and degree of bone involvement, (osteomyelitis, decalcification, etc.) associated with the local lesion. It may be used to show calcification of the vessels and to determine whether the main or minor vessels are involved. However, extensive sclerosis and marked calcification may be present without gangrene, and minor amputation may be done in the face of such sclerosis and calcification because of a favorable collateral circulation. On the other hand, the absence of calcification is no assurance of an adequate main vessel or collateral circulation.

Visualization of the arterial tree by injection of various opaque substances, such as Thorotrast, directly into the main artery and making an immediate x-ray exposure is complicated and not without danger. Furthermore, there may be an associated arteriospasm which prevents the collateral branches from filling, and it is the determination of the latter which is really of greatest importance.

It is sometimes of importance to determine how much spasm is associated with organic occlusion and how much dilatation is possible. For this purpose the method Landis and Gibbon (1932 and 1933) of immersing the arms (when testing the circulation of the legs) in warm water (110 degrees F.) and comparing the skin temperature of the legs after twenty minutes with that before the immersion, is probably the most reliable. The histamine test is also sometimes of value in indicating the degree of capillary dilatation possible in the skin at various levels, by the size of the wheel and flare after scratching through a drop of histamine placed on the skin. Both sides should be tested for comparison.

I wish to repeat that these more complicated and specialized tests are not necessary and are secondary in importance to the observation of the local lesion, the pulsation of the vessels, the color and the temperature of the skin.

There is a marked difference of opinion held by individuals and clinics as to the proper handling of diabetic gangrene, varying from complete conservative management to the most radical high amputation. Individual cases may be cited to support all of these views and it is no doubt true that each case must be a law unto itself. However, there are certain criteria upon which judgment in each individual case may be based.

CONSERVATIVE MANAGEMENT

Let us first examine the type of case suitable for conservative or non-operative treatment. In my opinion this is the type that has a superficial ulceration or gangrenous patch on the leg, foot, or toe, with pulsating dorsalis pedis and posterior tibial vessels or, if these vessels are not palpable, with good skin color and temperature, indicative of a good collateral circulation. The lesion must be well demarcated and the secondary infection, if present, must be slight and well localized—the ability to localize being an important sign of adequate circulation. It must, of course, be remembered that severe pain or economic necessity may make conservative treatment out of the question, even if the other conditions are favorable.

Conservative management, like all treatment of diabetic gangrene, demands close cooperation between the surgeon and internist. Proper diet and regulation of insulin dosage is essential. Locally the main thing to be stressed is gentleness in handling the lesion. Diabetic tissues withstand trauma poorly, and cutting away of gangrenous portions will only be followed by new areas of gangrene. These should be allowed to slough off by themselves or possibly with the aid of antiseptic dressings such as those with Dakin's solution, especially when infection is present. Dry heat in the form of electric lights within a cradle is valuable, and the leg should be elevated to reduce congestion. Moist heat in the form of hot packs is usually not well tolerated and may help produce a phlebitis or may convert a dry into a moist gangrene. A spreading infection will probably preclude the use of conservative measures so that hot packs would still not be indicated, except as a preliminary to surgery. The use of exercises, particularly Buerger's exercises, to stimulate circulation is of definite value in the small localized lesion but has no place in the large, spreading lesion, or one with active infection.

Case No. 1. Mrs. E. C., age 60, University Hospital No. 49744. Gangrene of left third toe with secondary infection. Conservative treatment. Sloughing of gangrenous tissue. Minor incisions on plantar side for drainage. Recovery without amputation.

Case No. 2. Mr. F. H., age 73, University Hospital No. 53042. Beginning gangrene of right great toe of three weeks duration with secondary infection around nail. Also superficial ulcerations of left leg, associated with varicosities. X-ray showed calcification of arteries of both extremities, extending well down into the terminal branches of the feet and some rarefaction of the metatarsals and phalanges on the right. Histamine tests showed diminished circulation of both feet, but color and temperature good. Conservative treatment by rest, elevation, antiseptic dressings and dry heat. Complete healing in three weeks after admission.

Case No. 3. Mr. S. S., age 66, University Hospital No. 53077. Gangrene of tip of right great toe and superficial gangrene of calluses on ball of foot following pressure by shoes and exposure to cold. Extensive calcification of arteries by x-ray. Fair color and temperature of rest of foot and leg. Diminished circulation of feet by histamine test. Conservative treatment. Recovery.

Sometimes conservative treatment fails, possibly because of poor choice of cases, and the gangrenous area or secondary infection, or both, begin to spread, or a septicemia ensues. Immediate high amputation then becomes necessary, and even that may be too late and may make one wish he had not resorted to conservative management in the first place.

Case No. 4. Mrs. M. S., age 59, University Hospital No. 51583. Large obese woman with moderately severe diabetes and gangrene of left great and second toes. Dusky discoloration of dorsum of foot and distal half of leg. Foot and leg definitely colder than other side. Posterior tibial and dorsalis pedis not palpable. X-ray showed calcification of these vessels. Histamine tests showed no reaction on leg and foot. Conservative treatment with hot packs, but patient soon developed large areas of superficial phlebitis of medial and lateral aspects of leg, with dusky discoloration and superficial ulcerations. Amputation above knee. Uneventful convalescence and good healing of stump.

Case No. 5. Mrs. C. R., age 59, University Hospital No. 50200. Gangrene of left great toe. Sloughing of gangrenous portion and secondary infection in plantar area. X-ray showed calcification of arteries and osteomyelitis of phalanges of great toe and first and second metatarsal bones. Conservative management for a time. Increasing chills and fever. Amputation above knee. Death from septicemia following day.

INDICATIONS FOR OPERATION

When the gangrene involves one or more toes, or the foot itself, especially if accompanied by deep or extensive infection and severe pain uncontrollable by conservative management, operative treatment is certainly indicated. There are, however, border-line cases which might be treated by either conservative or operative methods. These severely tax the judgment of both internist and surgeon, and only the end results determine whether the judgment was correct. The economic factor may influence the decision, as not all patients can afford the time and resulting loss of income that conservative management entails. Finally, a lesion which might otherwise be treated conservately may demand amputation to relieve the patient from sepsis during a severe diabetic crisis.

LEVEL OF AMPUTATION

Having decided on surgical treatment the next question is the level of amputation.

Amputation of a toe is indicated in gangrene of a toe with good pulsation of the dorsalis pedis artery or well demarcated gangrene of a toe without pulsation of the dorsalis pedis artery, if the foot is warm and of good color, and if the secondary infection is slight and confined to the toe or to that portion of the foot immediately adjacent. The ability to localize both gangrene and infection to a relatively small area is indication of fair circulation of the remaining areas, either from the main vessels or the collateral branches. However, the extent of the gangrene alone is no criterion as to the level of amputation, since a relatively small area of gangrene may be accompanied by a deep spreading infection and poor circulation of the surrounding area. Amputation of a toe may be well combined with incisions into the dorsal or plantar surface of the foot to drain localized infections adjacent to the gangrenous area.

Case No. 6. Mr. G. J., age 61, University Hospital No. 52672. Typical dry gangrene of left second toe. Dorsalis pedis and posterior tibial vessels not palpable, but foot and rest of toes warm and of fair color. Marked calcification of vessels by x-ray. Histamine tests showed no reaction on left foot and leg and only fair reaction on thigh. Skin temperature tests showed inability of vessels to dilate when arms were immersed in hot water. Amputation at first interphalangeal joint. Dismissed with slight infection in stump which was apparently clearing up.

Major amputations through the leg or thigh are indicated in cases with gangrene of one or more toes, or of the foot itself, where the dorsalis pedis pulse is absent and the foot is cold and of poor color, or where gangrene is accompanied by a spreading infection involving the deep structures of the foot. Severe pain and the necessity of removing the burden of sepsis may also influence the decision for major amputation.

The level of the major amputation (below or above knee) will depend upon the extent of the gangrene and infection, and especially upon the determination of the level of change of color and skin temperature as previously discussed. It is, of course, necessary to amputate well above the area of gangrene or infection (including infected lymphatics), but it is especially necessary to amputate through an area of sufficient circulation to insure healing. Amputation above the knee is the safest and the most apt to give good healing. On the other hand, where circulation permits, amputation below the knee gives the advantage of a knee joint for better function with an artificial limb. I do not believe an arbitrary rule can or should be established for all cases, but the decision in each case should depend upon the above factors.

Case No. 7. Mr. C. M., age 62, University Hospital No. 56317. Typical diabetic gangrene of right great toe with secondary infection and extension of latter to dorsum of foot. Large draining ulcer on dorsum and two smaller incisions draining pus. Discoloration almost to ankle. Sudden temperature change just above ankle. Femoral and popliteal arteries palpable. Posterior tibial and dorsalis pedis not palpable. X-ray showed marked sclerosis of vessels, and involvement of metatarsal and trasal bones. Histamine tests showed good reaction down to ankle. No increase in skin temperature (by skin thermometer) after immersion of arms in hot water. Amputation below knee. Section of vessels showed sclerosis and calcification. Injection of Thorotrast into vessels of amputated specimen showed good collateral circulation to a level about three inches distal to line of amputation. Stump healed almost by primary union.

Case No. 8. Mrs. L. B., age 55, University Hospital No. 53126. Gangrene of left foot with definite line of demarcation where liquifaction necrosis and secondary saphrophytic infection were evident Posterior tibial and dorsalis pedis not palpable. Popliteal and femoral palpable. Fair color and warmth above line of demarcation. Histamine tests showed slight reaction on left leg and foot. X-ray showed calcification of tibial vessels. Other leg previously amputated above knee. Large pressure sore over sacrum. Amputation above knee. Amputated specimen showed calcification and occlusion of vessels in microscopic sections. Death six days after amputation from septicemia and pneumonia.

Case No. 9. Mrs. M. J., age 57, University Hospital No. 54026. Infection and gangrene of right foot. X-ray showed extensive arteriosclerotic changes and osteomyelitis of the proximal phalanges. Amputation above knee. Dissection of amputated leg and foot showed posterior tibial diminishing in diameter rather abruptly just distal to its origin; anterior tibial patent to the dorsum of the foot; peroneal patent to ankle; infection and gangrene of the third toe with osteomyelitis of proximal phalanx and extension of infection along lumbricals and flexor sheaths to deep plantar spaces, M_2 and M_3. Also extension dorsally, subcutaneously and subaponeurotically. Sections showed extensive calcification of the vessel walls with occlusion in places, and degeneration of muscle fibers. Recovered.

Case No. 10. Mr. B. G., age 47, University Hospital No. 54758. Diabetic gangrene of right foot with infection. All toes gangrenous. Dorsalis pedis and posterior tibial not palpable. Extremity cold and discolored to mid-leg. Infected ulcer on dorsum and little toe. X-ray showed extensive arteriosclerosis and some bone involvement. Amputation above knee. Dissection of amputated leg showed marked sclerosis and calcification of popliteal, posterior tibial, and peroneal vessels. Lumina of tibials open to region of demarcation, though constricted. Peroneal occlusion near ankle. Very few small branches. Poor collateral circulation. Muscles edematous. Death following day. Gas gangrene of stump of uncertain origin. Thorotrast injection after death of femoral artery of other side showed by x-ray numerous small anastomotic vessels, irregular deformity of femoral artery secondary to sclerotic change, marked narrowing of dorsalis pedis, irregular narrowing of first interdigital branch and little filling of arterioles through amputated stump of great toe.

Time does not permit a discussion of the various types of amputation or techniques. However, a few general remarks may be indicated. In the first place, amputation must be simple and rapid with the least amount of trauma to tissues. In the second place, circular or modified circular amputation, without long flaps to become gangrenous, is best. Where it is impossible to get definitely above the area of infection the stump should be left open. Otherwise it should be closed, usually without drainage. A tourniquet should never be used as it traumatizes vessels above the lines of incision and interferes with subsequent healing.

PRIMARY INFECTIONS WITH OR WITHOUT SECONDARY GANGRENE

These occur usually in extremities with palpable main vessels or well established collateral circulation as evidenced by good color and skin temperature, since gangrene either does not occur at all or only secondary to the necrosis due to infection. However, although the circulation is sufficient to prevent primary gangrene, the margin of safety is slight and this plus the lowered resistance of diabetic tissues makes infection more difficult to control and more apt to spread than in the non-diabetic. Furthermore, the presence of infection makes the control of the diabetes more difficult, and the resulting glycosuria and hyperglycemia makes the lesion still more resistant to treatment—thus producing a vicious circle. The slightest scratch or abrasion should therefore be treated carefully and all trauma avoided so as to prevent, if possible, the more serious infections. Infective lesions include superficial ulcerations and abrasions, burns, paronychiae, osteomyelitis, infected corns and calluses, (including "perforating ulcers"), lymphatic, tendon sheath and fascial space infections.

Treatment of these infections will depend upon the particular lesion present. Non-operative treatment, such as described under the heading of gangrene, is indicated in those superficial lesions not requiring surgical drainage (such as infected ulcers, calluses, and abrasions), and in deeper lesions preparatory to operation (osteomyelitis, fascial space infection, etc.).

The operative treatment may consist of simple incision and drainage of the infected area. This is especially true in case of tendon sheath or fascial space infection, and the incisions are similar to those used in the non-diabetic. One must be especially careful to avoid unnecessary trauma and interference with blood supply. Osteomyelitis of one or more phalanges, usually secondary to an infected corn or callus, necessitates amputation of the toe. A circulation which is sufficient to localize an infection to one toe will usually be sufficient to produce healing after amputation of the toe. The heads of the metatarsals, if involved, may also be sacrificed. However, if the entire metatarsal or the tarsal bones are involved, major amputation will be necessary, either below or above the knee, depending upon the extent of the bone and soft tissue infection as well as upon the adequacy of the circulation as determined by the methods previously described. One must amputate well above the area of infection and cut through tissue of adequate circulation to insure success. The necessity of removing the burden of sepsis and actual or threatened septicemia (as indicated by chills, fever, and positive blood cultures) are further reasons for amputation above the level of infection and inadequate circulation.

Case No. 11. Mr. H. L., age 49, University Hospital No. 50280. Blister on right great toe became infected and infection spread to deep structures of foot and leg. Numerous incisions in foot and leg made before admission in attempt to drain infected spaces. Poor circulation evidenced by coldness and discoloration almost to knee, and negative histamine tests. Femoral and popliteal arteries palpable. X-ray showed bone changes in foot and ankle and moderate sclerosis. Secondary gangrene of tips of medial four toes. Chills and fever. Amputation above knee. Sections of vessels from amputated leg show moderate sclerosis and considerable inflammation. Good recovery.

Case No. 12. Mrs. A. G., age 67, University Hospital No. 49573. Infection of palm of right hand following injury by crochet hook over fourth metacarpophalangeal joint. Eleven incisions for drainage before admission to hospital. On admission, had tendon sheath infection of fourth finger with sloughing of flexor tendons and spread to mid-palmar space. Spread from latter to dorsal subcutaneous and subaponeurotic spaces along lumbrical and interossei muscles. Also involvement of third and fourth metacarpal bones and proximal phalanges of those fingers. First operation—removal of third and fourth fingers and corresponding metacarpal bones. Satisfactory progress for a while and then extension of infection to bones of wrist and lower ends of radius and ulna, with involvement of deep forearm space. Latter drained by through and through lateral incisions. The persistence of sepsis made amputation above the elbow necessary a few days later. Sections of arteries from amputated limb showed moderate sclerosis and marked inflammatory reaction. Good recovery.

SUMMARY AND CONCLUSIONS

The proper management of infection and gangrene in the diabetic demands close cooperation between the internist and surgeon, a careful evaluation of the circulation of the involved extremity and a choice of therapy based upon the character of the lesion, the adequacy of the circulation, and the general condition of the particular patient in question. No arbitrary rules may be laid down for all patients but each must be a law unto himself and be treated accordingly.

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DISCUSSION

Dr. A. S. RUBNITZ, (Omaha): I think Dr. Grodinsky excellently covered the ground, but he showed us the most pessimistic side of it.

We do see a good many borderline cases, and I think in those cases the conservative management should be advocated. I should like to stress the point that the inability of the diabetic to handle fats is the underlying factor which is responsible for his vascular condition. Since the insulin era, we are learning that the diabetic ordinarily dies because of the vascular condition, and the latter is generally due to faulty management of the diet.

We used to think, only a few years ago, that if we had balanced the ratio of the fatty acids to the total glucose in the diet so as not to exceed 1.5 to 1 we were doing our share by the patient. Now we are gradually learning that the vascular occlusion is due to the inability of the diabetic to handle fats. We know that there is a gradual intimal occlusion bringing about a time when the circulation of an extremity may be in balance. Nature in the meantime is establishing a collateral circulation. During a critical period of such readjustment it does not take much to turn a relatively insignificant infection into gangrene.

If you are cognizant of the fact that a collateral circulation is being established and, by dietary management, are trying to arrest the process which leads to intimal occlusion in the first place, you are justified in playing for time, hoping that the newly-formed circulation will eventually become adequate. I am not talking about extreme cases, or cases where senile changes are taking place along with the diabetic changes.

In a diabetic individual of around 45 years, though the infection of a toe may look nasty—if you readjust his diet so that the fats are cut to the minimum and the carbohydrates are raised to the reasonable maximum, you may be gratified to find that the case will clear up without surgical intervention.

DR. EARL A. CONNOLLY, (Omaha): In the subject matter covered in the last two papers, both Dr. Grodinsky and Dr. McLaughlin have stated that the condition of the vessel is an occlusive disease. If the main vessels have been blocked, treatment to be effective must be directed toward opening the collateral circulation. Infections in diabetes are handled poorly and produce spasm reducing the collateral circulation. Buerger's exercises are very important, not only in Buerger's disease but in any vascular insufficiency.

A recent article by LeRiche showed definitely that collateral circulation responded more rapidly following sympathectomy or excision of a section of the main artery.

Thus, in injuries to arteries adequate collateral circulation is established much faster and more certain by resection of a liberal portion of the vessel than by ligature alone.

PUBLIC HEALTH ASPECTS OF A NEBRASKA MILK SUPPLY III

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In two previous papers(1)(2) the results of two surveys of Omaha milk were presented. The first of these was concerned with milk which was submitted to one milk purveyor for pasteurization, the second with market milk as sold on the city streets.

By way of summary of the first survey the following facts may be stated: Of fifty standard plate counts made of the milk of individual producers, only fifteen contained less than 150,000 bacteria per cubic centimeter. Many of the counts were enormous, ranging as high as 120,000,000 per cc. in one instance. The numbers of hemolytic streptococci in these varied from none in twelve samples to as high as 1,250,000 per cc. in one. In three instances they were too numerous to count. The samples from which these counts were made were collected from milk cans brought into the city by truck.

When counts were made of the milk of ten selected producers whose milk had been consistently of poor quality, the counts varied from 50,000 to nearly 60 million per cc. Six of ten samples contained more than two million bacteria per cc. The average was 9,500,000. Hemolytic streptococci varied from none in two instances to as much as 1,200,000 per cc. in one sample, the average of the positive samples being more than 300,000 per cc. When Breed counts of raw milk vats were made daily, it was seen that their curve roughly approximated that of the daily mean temperature.

The second survey was that of fifty-seven samples of milk purchased from milk wagons on the city streets. Twenty-five of these were raw milks: Six of the nine samples (66%) of market raw milks purchased during August, 1936, contained 150,000 bacteria per cubic centimeter, or less. The city ordinance states that in this period raw milk offered for sale shall not contain more than 150,000 bacteria per cc. Of the sixteen samples of market raw milk purchased during March and early April, 1937, only eleven (68.7%) contained 100,000 organisms per cc. or less, thus meeting the requirements for the winter period as specified in the city milk ordinance. Forty-four per cent of the twenty-five samples were contaminated by B. coli.

Of the pasteurized milks, only twenty, or about 62%, contained 50,000 bacteria per cc. or less, which is the limit prescribed by the city milk ordinance. About 18.7% of the pasteurized samples were contaminated with organisms of the coli-aerogenes group of intestinal bacteria.

PUBLIC HEALTH ASPECTS OF MILK SUPPLIES
GENERAL CONSIDERATIONS

Man, seeking for an easily accessible source of food, learned early the value of the milk-producing animal. The origin of the practice of using animal milk for food is lost in antiquity. Nor is it known just when milk was first suspected as being the agent for the transmission of some diseases. Suppositions and suspicions must have been entertained by medical observers comparatively early, but they could be nothing but suspicions until the pioneer work in bacteriology in the last century opened the way to a clearer understanding of the causation of disease. The tremendous impetus which followed the work of Pasteur and others soon lead to the discovery that milk could be responsible for some of the epidemics to which humanity was often subjected.

According to the literature, interest in milk-borne disease in the United States began about 1880. Trask(3) and earlier authors reported 179 such epidemics up to 1909. This has been studied more recently by Armstrong and Parran(4) who completed the compilation to January 1, 1927, bringing the total number to 791. There is much discrepancy in the literature as to the number occurring since then, but it appears that no less than 1,200 outbreaks have occurred in this country between 1880 and 1936.

Harding(5) has reviewed the findings of various health officers and departments of health and lists 415 milk-borne epidemics occurring from 1927 to 1936. Just why approximately 33% of the milk-borne epidemics should have occurred during the past ten years has not been explained. The problem is peculiarly an American one, since the habit of using uncooked milk is more common here than elsewhere.

There are certain features which are commonly observed in milk-borne epidemics. According to Armstrong and Parran(4) they are, in part:

1. The outbreak is often explosive in onset—but not always so.
2. The percentage of cases on the incriminated milk supply is greater than the percentage of population using that supply.
3. Cases occur among users of milk, ice cream, etc.; therefore children, women and well-to-do families often suffer higher attack rates than do poorer families.
4. Multiple simultaneous cases often occur in the same household.
5. The incubation periods may be shortened.
6. When the infected milk supply is stopped, the outbreak subsides.

Another feature which has gradually become more evident in recent years was discussed by Harding(5) in his report of the 1935 epidemics. He says: "There is the usual relation between location of the milk-borne epidemic and the size of the community in which it occurs. . . . Put in another way, 74 per cent of these epidemics occurred in communities so small that the milk supplies were not under local health control."

THE MILK-BORNE DISEASES

Rosenau(6) has listed twelve diseases which may be transmitted by infected milk. These are: Bovine tuberculosis, typhoid fever, paratyphoid fevers, food infections, diphtheria, scarlet fever, septic sore throat, undulant fever, foot and mouth disease, diarrhea and dysentery, epidemic arthritic erythema and anterior poliomyelitis. "Milk sickness" is also sometimes included in the list, though this disease is probably not bacterial in origin. In a few instances other diseases have been borne by milk or milk products.

Milk-borne disease is and always has been preeminently transmitted through raw milk. A review of the report of Armstrong and Parran(4) shows that of the milk-borne typhoid fever epidemics reported by them in 444 outbreaks in which the source could be studied, 133 were spread through raw milk; pasteurized milk was incriminated in twenty-one outbreaks, while the character of the milk was not stated in 290. In forty-two outbreaks of septic sore throat studied by these same authors, raw milk was responsible in nineteen, pasteurized milk in three, certified milk in one and ice cream in one. Raw milk has been incriminated in most of the scarlet fever outbreaks traced to milk. A similar finding obtains in the outbreaks of other diseases.

The more recent findings of Harding(5, 7, 8, 9, 10, 11, 12) may be summarized in tabular form as follows:

TABLE 1

Year	Number of Milk-borne Outbreaks	Outbreaks Traced to Raw Milk
1929	50	45
1930	48	45
1931	34	31
1932	33	31
1933	42	42
1934	45	44
1935	36	32

Even when pasteurized milk has been incriminated, the pasteurization process has usually been found faulty, or in some instances, to have been actually omitted. These features are well illustrated in two famous outbreaks.

The first was an epidemic of septic sore throat which appeared in Chicago in 1911-1912, and was reported by Capps and Miller(13). The onset was explosive. Most of the victims were consumers of the milk of Dairy X. In one hospital the milk supply for the children was raw milk from this dairy but was specially pasteurized in the hospital after being received. No cases occurred among the children, while internes and nurses, using the general supply, developed many cases. It was estimated that ten thousand cases occurred in the city. The dairy in question was using the "flash method" of pasteurization. Inspection of the temperature records seemed to indicate that the required temperature was not attained on six occasions. The peaks of the epidemic, allowing two days for delivery and two to four days for the incubation period, seemed to correspond to these pasteurization failures.

A second great outbreak occurred in Montreal in 1927. In this case the disease was typhoid fever, many cases appearing suddenly in March. The epidemic reached a peak on March 18th, then subsided somewhat. A recrudescence began about April 20th and reached a peak in early May. It soon became evident that most of the victims used the milk of one dairy. Altogether more than five thousand cases appeared, and there were at least 488 deaths. Investigation by a special board of the United States Public Health Service(14) showed that the milk came from about 1,200 to 1,500 farms, some of which were unsanitary. Contaminated water had been used to wash cans at one milk collection station, and records seemed to show that more milk was delivered to the plant than was actually pasteurized. Later a bad connection was discovered in the piping of the plant. Furthermore the foreman of the plant was a typhoid carrier, though the investigators felt that he could hardly be incriminated. It was thought that the bulk of the infection must have occurred at the farms. The special board, in its final analysis, recommended a more efficient local health department, closer check on pasteurizing apparatus and water supplies and medical supervision for the dairy employees.

It has been previously stated that raw milk contamination may occur through the infected dairy cow, through milk handlers, or at the processing plant.

In the first, infection of the dairy cow may be of two sorts. The disease may be primary in the animal, as is bovine tuberculosis, foot and mouth disease, undulant fever and perhaps some others. In such instances the infection of the milk supply is incidental and the manifestations in man are entirely secondary. In the second type of infection, the disease may be primary in man, the animal secondarily acquiring the infection and thus becoming a distributing agent for a disease which probably does not occur in cattle in the natural state. Udder infections with the streptococci of scarlet fever and septic sore throat are the chief examples of this. It is now well known that the usual bovine mastitis, or "garget," seen commonly in dairy cattle is caused by a streptococcus which does not seem to be pathogenic for humans. But Jones and Little(15), Brooks(16) and others have shown that bovine mastitis may be caused by human type streptococci. Brooks and Von D. Tiedeman(17) state that of the nineteen epidemics of septic sore throat and the four outbreaks of scarlet fever traced to milk in New York state in the eight-year period ending in 1935, twelve of the former and one of the latter were traced quite definitely to cases of bovine mastitis. These authors believe that most extensive outbreaks of these diseases are due to udder infections with streptococci of human origin. Diphtheritic teat infections from human cases and carriers have been reported.

While carriers and active cases may infect cattle, they really come into their own as purveyors of human disease when they act as milk handlers, dairy attendants and milk distributors. Chief among the diseases spread in this way are typhoid fever, the paratyphoid fevers, dysenteries and diarrheas, and diphtheria. Scarlet fever and septic sore throat outbreaks have also occurred through these channels, as well as the few reported milk-borne outbreaks of anterior poliomyelitis.

Typhoid fever still leads the list of milk-borne diseases, occurring more frequently than any other. Up to 1927, 77.5% of the 791 American milk-borne outbreaks were typhoid fever. According to the Harding(5) figures, the percentage since then has varied from 55 to 70%, except for the year 1935, when the percentage dropped to 42.

Thus it becomes increasingly evident that healthy cattle, healthy milk handlers and proper pasteurization are necessary if a milk supply is to be fit for human consumption. Topley and Wilson(18) put it more strongly when they state that "No raw milk can ever be regarded as completely safe for human consumption."

"Pasteurization," says Rosenau(6), "prevents sickness and saves lives. Pasteurization is not ideal but only an expedient. It is advocated because milk is likely to convey the viruses of a number of diseases harmful to man. Pasteurization effectively prevents this hazard. . . .

"Pasteurization does not claim to replace sanitation and common decency. It cannot atone for filth and should not be used as a redemption process. Stale, weak, and dirty milk is stale, weak, and dirty after it has been pasteurized. Theoretically, a pure milk is better than a purified milk. However, no one should drink raw milk that cannot be guaranteed by the health officer as safe and free from danger. Rash, indeed, would be the health officer who would give any raw milk a safe bill of health, for raw milk is likely to be infected by carriers, missed cases, or other unseen means. Furthermore, infection in milk does not disclose its presence by our available tests. Even certified milk or milk of equally high character is not safe without pasteurization. . . . There is no authentic record of any milk-borne epidemic caused by properly pasteurized milk." This same author adds that inspection is of prime importance, since it leads to cleaner milk; but inspectors cannot be everywhere at once, hence the need for pasteurization.

INTERPRETATION OF RESULTS OF THE OMAHA MILK SURVEYS

Absolute interpretation of such data as has been presented in the two previous papers is difficult and perhaps impossible. There are many factors which combine to make conditions what they are. Obviously nothing was known to us in regard to infection of dairy cattle, if any, nor was there any information as to the sanitation of the farms on which it was produced. The same is true in regard to the health of milk handlers and to conditions which may exist in local dairies. However certain inferences may be drawn and these shoould be pointed out.

Cows' milk, according to the U. S. Public Health Service Milk Ordinance and Code(19), normally contains a few thousand bacteria per cubic centimeter, even when freshly drawn into clean containers. When the milk is drawn from dirty cows into contaminated vessels by dirty hands, the initial count will be greatly increased. And when this is combined with filth, carelessness, and disregard for the elemental sanitary principle of proper cooling, the bacteria in milk may multiply to staggering totals. The very fact that there is a vast difference between the counts of the milk of individual producers suggests that the milk has been handled under varying sanitary conditions. Furthermore since the Breed counts of the vats of raw milk tend to follow the curves of the daily mean temperature, i.e., the numbers of bacteria increase as the atmospheric temperature more closely approaches the optimum for bacterial multiplication, it may be assumed that the milk was not cooled and maintained at a low temperature. This would be of particular significance if the milk were contaminated with pathogenic bacteria, since the higher temperatures would permit their multiplication and thus make the milk more dangerous. That bovine mastitis is prevalent in this area is suggested by the numerous hemolytic streptococci.

The market raw milks were somewhat better, but even so only 66% of these had counts which complied with the requirements of the city ordinance. This being the case, we are faced with the inference that some of them were not produced or handled under satisfactory sanitary conditions.

Of more significance is the occurrence, on two occasions, of much higher counts in the pasteurized milk than in the raw milk of one dairy. The question is immediately raised as to whether this milk was really pasteurized, and, if so, as to how long it had been held in storage after processing.

Nearly 40% of the pasteurized milk samples exceeded the legal limit as to standard plate counts. This fact, with the more significant occurrence of intestinal bacteria in 18.7% of the samples, forces the inference that pasteurization failures have occurred. The Breed counts of these samples indicate again that bacterial contamination of the raw milk before pasteurization was very heavy in some instances. This again suggests that much of the milk was produced under unsatisfactory sanitary conditions, and necessarily complicates the pasteurizing process in that it is much more difficult to kill off large numbers of bacteria than small ones, particularly if they exist in large clumps. Such was the case in those samples presenting high Breed counts.

This study indicates that there is a real need for improvement of the raw milk supply in Omaha. This is possible under adequate and enforced legislation. If this is attained and if processing is carried out under strict supervision, a finished product of safety and high quality may be reasonably expected.

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USE OF THE CYSTOMETER IN DIAGNOSIS OF NEUROGENIC BLADDERS*

(With Comments on Treatment and Case Reports),

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Accurate diagnosis of the causes of bladder symptoms is extremely important. You are all familiar with the obstructive causes, but the neurogenic causes are less frequent and less well understood, and it is this group that I wish to discuss here.

If neurogenic dysfunction of the bladder can be definitely ruled in or out, in a given case, a clinical diagnosis may be confirmed or dismissed entirely. This will direct the clinician toward a proper diagnosis. Frequently, too, definite obstructive lesions may be found in neurological patients and a definite decision must be made as to the cause of the vesical symptoms, that is, whether neurogenic or obstructive. Again, early in neurological lesions, urinary symptoms may not be present, and yet, because of the compensatory activity of the bladder, retention of urine, distension of the bladder, and early damage to the kidneys is already taking place. In this type of case the urologist is called upon to make the distinction between obstructive and neurogenic bladder. Cystoscopy is of immense help in determining the presence of obstructive lesions at the vesical neck, such as hypertrophy of the prostate, vesical calculus, tumor of the bladder, etc., but the mere presence of one of these does not prove the absence of a neurogenic cause. Estimation of bladder capacity, cystography, and intravenous or retrograde pyelography may be of some value.

There are two main groups of neurogenic bladders, hypotonic and hypertonic. The hypotonic bladder has a relaxed detrusor, contracted sphincter, and large bladder capacity. Expulsive force is lost, and as the bladder distends a point is reached at which the urine spills over causing paradoxical incontinence. The hypertonic bladder, on the other hand, is just the opposite; the detrusor is spastic and contracted, and therefore the capacity is small; the internal sphincter is relaxed, and therefore true incontinence results. The cystoscopic picture of hypotonic bladder is that of thin wall, large capacity, tight internal sphincter, and of fine trabeculations. Should an obstructive lesion be present, such as hypertrophy of the prostate, the fine trabeculations will be lost, and course trabeculations of obstructive origin will take their place obliterating one of the cardinal diagnostic points. Again, the spastic sphincter might occasionally simulate prostatic hypertrophy particularly of the median bar type. The cystoscopic picture of a hypertonic bladder, on the other hand, is that of contracted spastic bladder with either course trabeculations or none at all. This condition might easily simulate the obstructive type, and the relaxed sphincter usually noted in these cases might be filled in with prostatic tissue. In the event that no obstructive lesion is noted at cystoscopy, a diagnosis of neurogenic bladder is made by the process of elimination, a rather speculative procedure.

Cystoscopic examination is frequently adequate in the late stages of neurogenic dysfunction, but occasionally it is misleading in the early stages. It is entirely inadequate for following the changes in the bladder during the progress of neurological diseases. A more accurate estimation of vesical function is desirable.

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In examining this problem further a brief discussion of the physiology and innervation of the bladder is necessary. Similar to other viscera, the bladder has a dual nerve supply. The aortic, lumbar and renal ganglia converge forming the presacral nerve. This lies retroperitoneally in the triangle produced by the common iliac arteries and a transverse line passing over the promontory of the sacrum. The presacral nerve later forms the hypogastric ganglia. This constitutes the sympathetic nerve plexus which supplies the bladder with inhibitory fibers to the detrusor muscle and motor fibers to the internal sphincter. Stimulation of the presacral nerve causes a dilatation of the bladder and contraction of the internal sphincter. These are the "filling nerves" of the bladder. Coming from the 2nd and 3rd sacral segments is the pelvic nerve which carries the parasympathetic nerve supply to the bladder. Stimulation of the parasympathetic nerves causes contraction of the detrusor and relaxation of the internal sphincter, and, therefore, these are the "emptying nerves" of the bladder. Some authors object to this simple explanation of bladder innervation, but for all practical clinical purposes it is adequate (Figure 1). Both sets of nerves carry afferent sensory fibres but to a varying degree. The parasympathetics carry the first desire to void impulse and a low degree of bladder sensation, while the sympathetics carry a high degree of sensory innervation. Co-relating the autonomic nerve supply with types of neurogenic bladders, then, one might think of the hypotonic bladder as one of sympathetic overbalance, while a hypertonic bladder is one of over-parasympathetic imbalance. Therefore, in the therapy of the neurogenic bladder, an effort is made to correct this imbalance. The hypertonic bladder may be due to two types of neurological lesions. It is either due to a stimulation or overactivity of the parasympathetic "emptying nerves" or to diminished activity of the sympathetic or "filling nerves." Obviously, either inhibition of the "emptying nerves," or stimulation of the "filling nerves" would be effective. However, if the sympathetic nerves were entirely degenerated, then stimulation would be of no avail. Something of the state of the bladder with reference to its parasympathetic-sympathetic innervation and activity is necessary in order to treat these cases intelligently either by drugs or by sympathectomy.

FIGURE 1—NERVES OF URINATION

SYMPATHETIC	PARASYMPATHETIC	NERVUS PUDENDUS
"Filling nerves"	"Emptying nerves"	Voluntary control ext. sphincter and other perineal muscles.
Stimulates int. sphincter.	Stimulates detrusor.	Stimulates ext. sphincter deep trans. perineal muscles, prostatic bulbo-cavernosis, and ant. portion of levator ani muscles.
Inhibits detrusor muscle.	Inhibits internal sphincter.	
Sensation of overdistension.	Early sensation of filling with first reflex urination secondarily stimulating nervus pudendus and thus first desire to void.	Sensation of first desire to void.

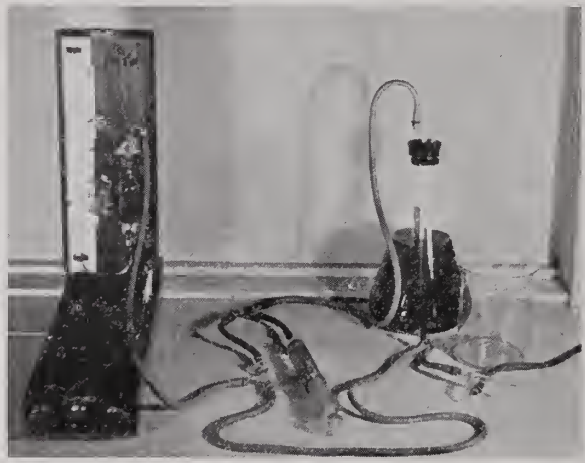
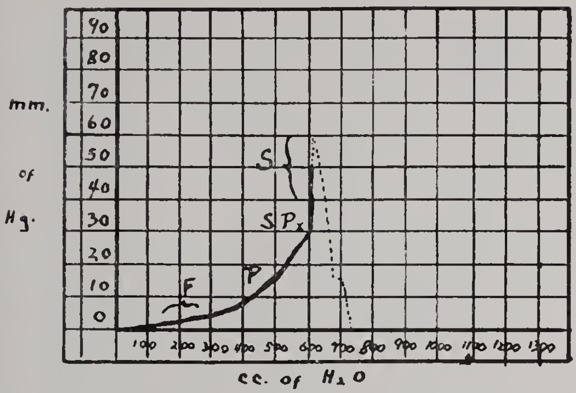


FIG. 2. Cystometer.

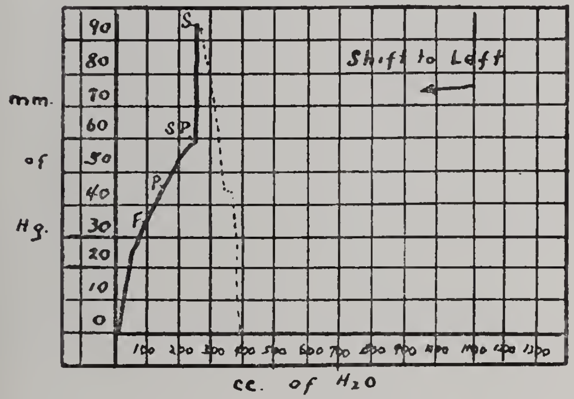
For an accurate estimation of bladder capacity, detrusor activity strength and tone, and sphincter activity and tone, the cystometer is ideal. This is a relatively inexpensive apparatus available commercially, or one that may be made easily from a few common articles found in nearly any laboratory. It is an apparatus designed to record the response or tonus of the detrusor to a gradual filling of the bladder with fluid. (Figure 2). A three-way stop-cock or automatic valves are necessary, as well as a water or mercury monometer. The latter is more compact but has certain theoretical disadvantages. A continuous water system between the bladder and the monometer is desirable. A catheter is passed into the bladder, the bladder is gradually filled, and the pressure noted at intervals and plotted. As the bladder begins to fill, the patient is instructed to tell the operator when he feels the first desire to void. This is important. The point of pain of over-distension is noted, and at this point the patient is instructed to force the fluid out against

FIGURE 3—CYSTOMETRIC CURVES

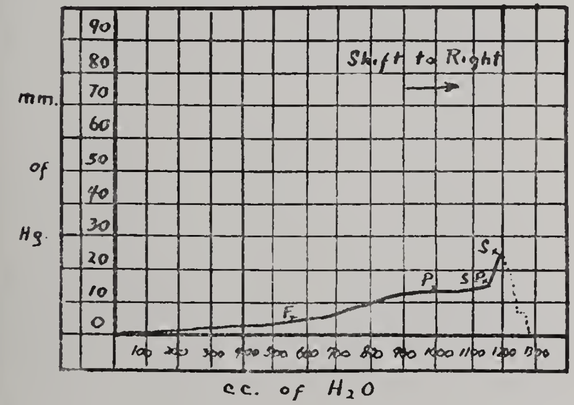
A. NORMAL



B. HYPERTONIC



C. HYPOTONIC



the monometer, thus recording the maximum voluntary bladder pressure. A typical normal cystometric reading is illustrated in Figure 3 A. Note the method of recording first desire to void (F), feeling of fullness or pain (P), severe pain of overdistension (SP) and maximum voluntary bladder pressure or straining pressure (S). Emptying pressures are recorded, but recently, I have felt that these are unnecessary and of no clinical significance. The normal curve rises slowly with each 50 cc. of filling, always remains below 40 mm. of Hg., and becomes more acute after 500 cc. of fluid have been introduced. The normal first desire to void is between 150 and 250 cc. The maximum voluntary pressure is between 40 and 60 mm. of Hg. Therefore, four important points are noted in a cystometrogram; first desire to void, feeling of fullness or pain of overdistension, maximum voluntary bladder pressure, and the relative pressure curve. All four of these may not be in agreement in any single case, but if three out of the four correspond, a definite diagnosis can be made. In the hypertonic bladder (Figure 3 B) there is a shift of the first desire to void to the left (between 50 and 150 cc.), a shift of the full point to the left (between 200 and 400 cc.), a relatively high pressure curve, and a maximum voluntary bladder pressure of 60 to 100 mm. of Hg. In the hypotonic bladder, Figure 3 C, there is a shift to the right and relatively low pressures throughout. The bladder capacity may exceed 1200 to 1400 cc. The first desire to void is usually not obtained until 250 or 300 cc. have been admitted to the bladder, and in extreme cases may not be present at all.

There are a number of pathological lesions which may simulate neurogenic bladder. Acute cystitis and vesical calculus may simulate hypertonic bladder, while a diverticulum of the bladder or ureteral reflux may simulate hypotonic bladder. Therefore, a cystoscopic examination should follow every cystometric determination. It is important that cystoscopy follow and not precede cystometric readings because irritation and trauma from cystoscopy and caudal anesthesia will cause changes in the cystometric reading.

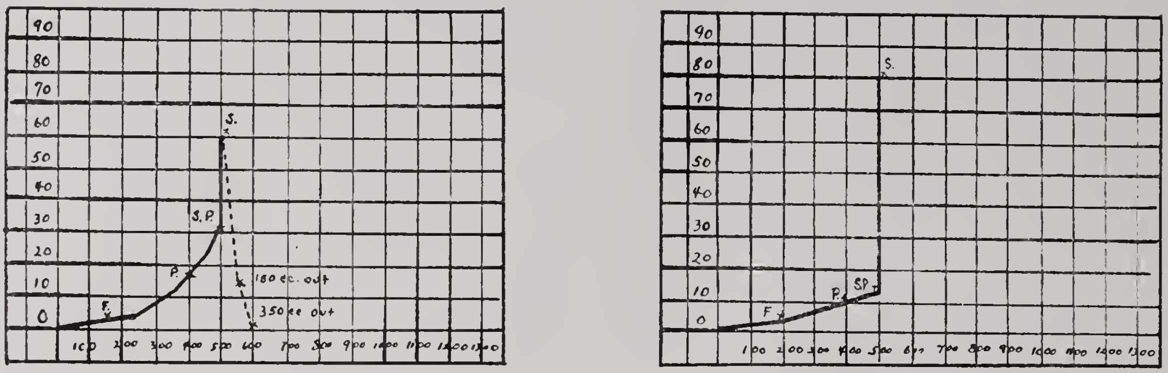
A few case reports follow with comments on the use of the cystometer in diagnosis of the neurogenic bladder, as well as treatment.

Case 1. C. H., age 63. Methodist Hospital, No. 117239.

Eight years ago began to complain of paresthesia of the lower extremities, increasing in the next two years to involve the lower abdomen, accompanied by vesical symptoms of obstruction and retention. A small sclerotic area found in the cord at laminectomy was split longitudinally. Following operation, the paresthesia was greatly improved but the vesical symptoms of obstruction continued and he voided with difficulty until two months before admission when it became necessary for him to be catheterized upon several occasions. For over two months he catheterized himself several times a week. The residual urine varied between 300 and 600 cc. The bladder was distended 2 cm. above the symphysis. The rectal sphincter was normal in tone. The prostate was uniformly enlarged to two times normal size. This patient had received competent medical treatment during the past 9 years during which time he had gone under the diagnosis of cord bladder and had been allowed to catheterize himself. The finding of a prostate somewhat enlarged at this time suggested that this might be the cause of the patient's vesical symptoms, although it was thought that the prostate was not much changed from that at earlier examinations.

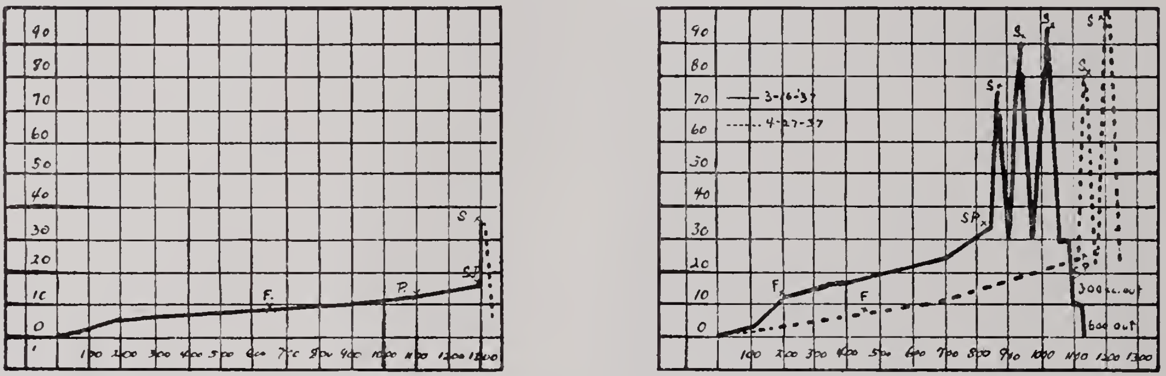
Cystoscopy was done which showed marked median

FIGURE 4—CYSTOMETROGRAMS—Case Reports.



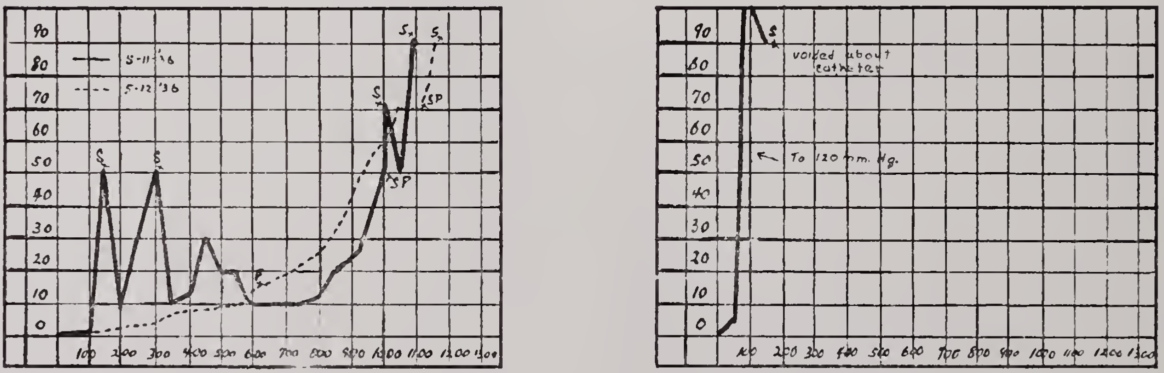
A. Case 1. Normal.

B. Case 2. Normal



C. Case 3. Hypotonic

D. Case 4. Hypotonic



E. Case 5. Hypotonic

F. Case 6. Hypertonic

and moderate lateral lobe enlargement and a few fine trabeculations of the bladder wall. The pyelograms were normal. The finding of an enlarged and slightly obstructing prostate seemed to be ample cause of the retention. However, further evidence was desirable to definitely rule out a neurogenic cause as well. A cystometrogram was done (Fig 4 A) which shows a fairly normal curve but slightly on the hypertonic side. The first desire to void, the bladder capacity, and the maximum voluntary bladder pressure were all within normal limits. The reading definitely ruled out neurogenic bladder.

Transurethral resection was done on October 17, 1936, removing 40 good sized pieces of prostatic tissue from the posterior vesical neck, a total of seven grams. Three days after operation the retention catheter was removed and the patient voided spontaneously emptying his bladder completely. The residual urine has been determined on numerous occasions during the past seven months and has varied between zero and 50 cc. He voids freely and easily.

This case demonstrates nicely the usefulness of the cystometer in differentiating the neurogenic bladder from the obstructed bladder as a result of prostatic hypertrophy. Had the two conditions co-existed, perineal prostatectomy or transurethral resection would have been done with a great deal more hesitation and with a much more guarded prognosis as to ultimate bladder control and function.

Case 2. A. W., age 52, Methodist Hospital.

This patient, seen in July, 1936, complained of frequency, slow, weak urinary stream, and incomplete emptying of the bladder during the past six years. Examination showed a relaxed rectal sphincter, and boggy prostate twice normal in size. The prostatic secretion contained pus grade 3. The residual urine was 240 cc. No abnormal reflexes or neurological finding.

Cystoscopy showed mild course trabeculations and a slight intrusion of the median lobe of the prostate. Granulation tissue seen in the posterior urethra gave evidence of chronic infection. The examination of the upper urinary tract was negative. Because of the relaxed rectal sphincter and marked residual urine without good expulsive power and only slight enlargement of the median lobe of the prostate, it was thought possible that this patient had an early neurogenic bladder without other neurological signs. Accordingly, a cystometrogram was done (Figure 4 B) which showed a fairly normal reading. The first desire to void, maximum voluntary bladder pressure, and bladder capacity were all normal. However, the pressure curve was rather low. While this case is not so spectacular as Case 1, the normal cystometric reading helped to rule out the diagnosis of neurogenic bladder.

The patient was treated by prostatic massage and bladder irrigations in an effort to reduce the gross infection of the prostate and thereby reduce the edema and size of the gland. Unfortunately, the patient returned to his home in Missouri before results of treatment could be determined.

Case 3. O. D., age 56, Douglas County Hospital, No. 23443.

Neurological diagnosis: tabes dorsalis and syphilitic melitis. Figure 4 C shows a typical advanced hypotonic bladder (atonic), with huge capacity of 1350 cc. and first desire to void at 560 (marked shift to right). This is a typical well advanced tabetic bladder with overflow incontinence at frequent intervals. Antiluetic therapy, and retention catheter failed to relieve the patient who died several weeks after admission to the hospital.

Case 4. E. A., age 54, University Dispensary, No. 71371.

This patient was first seen in the Urological Clinic on March 16, 1937. At that time he complained of stumbling in the dark of two years' duration and radiating pains from the hips to the feet of ten years' duration. One and one-half years previously, he had complete retention of urine necessitating catheterization over a four-day period. Free from symptoms following this until the preceding two months, he again had urinary symptoms consisting of marked urgency of urination so severe at times that he was in effect incontinent. This was accompanied by frequency and slow weak urinary stream. Examination showed a positive Rhomberg, absent deep tendon reflexes, loss of pain sensation in Achilles tendon, and sluggish irregular pupils. The rectal sphincter was relaxed and the prostate was palpably normal. The spinal fluid Wassermann reaction was positive. There was no residual urine. A neurological diagnosis of tabes dorsalis was made. Cystometric readings, Figure 4 D, show the first desire to void at the upper limits of normal, increased bladder capacity, but with fairly normal pressure curve and good maximum voluntary pressure. A cystometric diagnosis of early tabetic bladder (hypotonic) was made. Because there was no residual urine present and relatively little urine infection, no urological treatment was advised at that time. This patient received adequate antiluetic therapy during the following 6 weeks consisting of a total of 10 grains of Bismuth salicylate, and 3.0 grains of Neosalvarsan. All urinary distress had subsided and on April 27, 1937, the patient voided a large full stream. Antiluetic therapy undoubtedly was a factor in the marked subjective improvement. Cystometrogram on April 27, 1937, Figure 4 D, shows the first desire to void at 450 cc., and large bladder capacity (shift to the right), relatively lower pressures than on previous examination, but with good maximum voluntary pressure. Moderate hypotonic bladder is still present. Lack of residual urine suggested that this bladder is compensated and functionally adequate. Partial sympathetic inhibition (ergotamine tartrate) might be of value in this case of hypotonic bladder and will be tried if troublesome symptoms present themselves or if retention and residual urine manifest themselves.

Case 5. J. R., age 56, University Hospital, No. 53425.

Multiple sclerosis. Visable bladder distension with residual urine of 240 cc. rectal sphincter tone normal, prostate 1½ times enlarged. Cystometric reading, Figure 4 E, shows bladder contractions at 150, 250 and 300 cc. volume and good maximum bladder pressure. Because of this abnormal finding in a bladder of large volume (1050 cc.) it was thought advisable to repeat the reading the next day at the time of cystoscopy. The second reading, Figure 4 E, shows a typical hypotonic bladder with a shift to the right of the first desire to void and bladder capacity with a relatively low pressure curve. The cystoscopic picture was that of a typical hypotonic bladder; that is, thin wall and fine trabeculations. The internal sphincter, however, did not appear unduly dilated. One would not suspect prostatic obstruction from the appearance of the cystometric curve, and none was seen at cystoscopy although the prostate was digitally enlarged 1½ times.

This case is interesting in that two readings were necessary. Frequently the patient will not cooperate, coughs, or moves about and confuses the picture.

It would have been of interest in this case to determine if Acetylcholin (Mecholyl) a powerful parasympathetic stimulator, would have wholly or in part corrected the sympathetic overbalance in this case. Gernon, Palmer and McKenna, in a series of seven cases of multiple sclerosis, concluded that acetylcholin is the drug of choice in the treatment of the usual vesical lesions of multiple sclerosis.

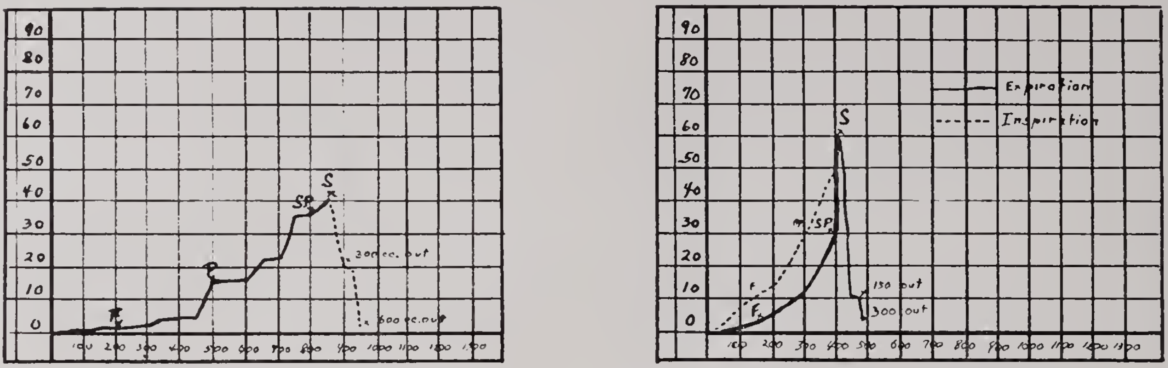
Case 6. M. W., age 62, University Hospital, No. 63912.

Operative and autopsy diagnosis of right frontal lobe brain tumor. Cystometric studies, Figure 4 F, are interesting in that there is a precipitous rise in intracystic pressure to 120 mm. of Hg. on injecting the first 50 cc. of fluid, with spontaneous voiding about the catheter after a subsequent fall in pressure to 90 mm. of Hg. This shows an extremely hypertonic bladder, a not uncommon occurrence in cases of brain tumor. Autopsy showed moderate benign hypertrophy of the prostate. Enlarged prostate again enters the picture in this case, and while of no clinical importance here, it brings to our attention again how frequently neurological and urinary lesions coexist.

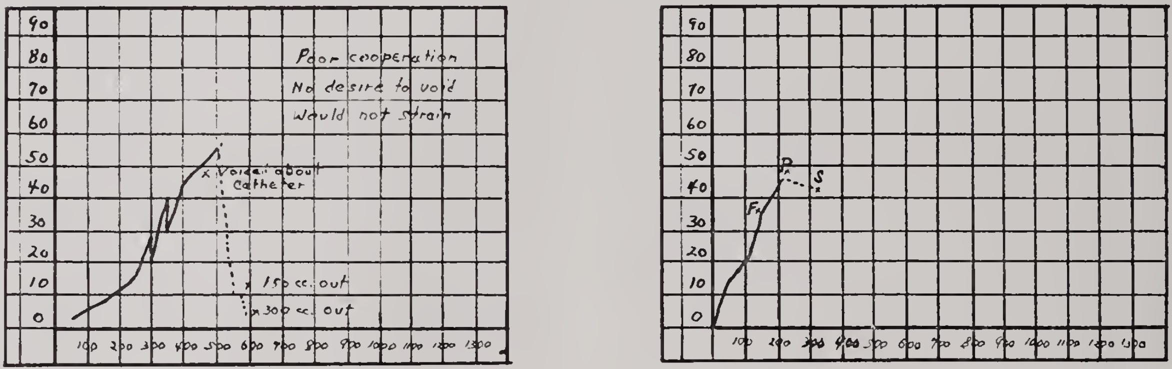
Case 7. H. W., age 69, University Hospital, No. 53375.

Loss of bladder control of 2½ weeks' duration. Clinical and autopsy diagnosis of tumor involving the third and fourth thoracic vertebrae with cord compression. The cystometrogram, Figure 5 A, shows the first desire to void and pressure curve within normal limits, but there is increased bladder capacity, and very low maximum voluntary bladder pressure. Rectal examination showed the rectal sphincter to have fair tone and the prostate to be twice enlarged. The patient died before cystoscopic examination could

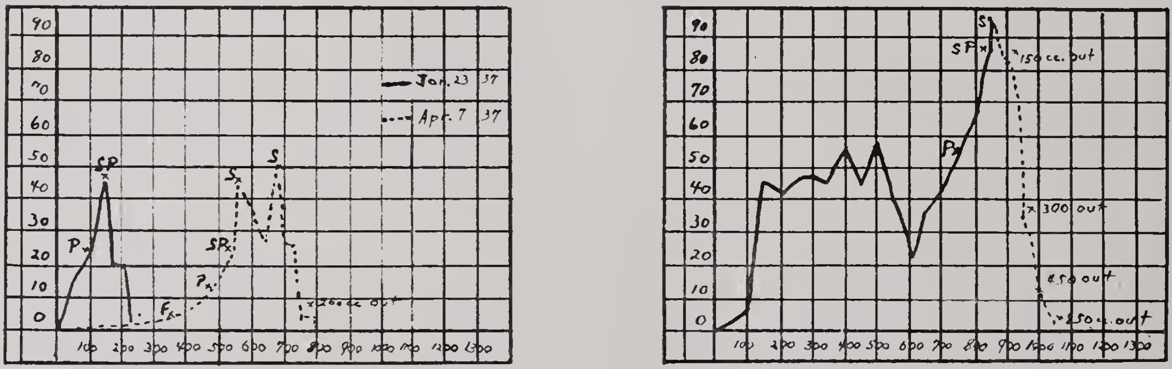
FIGURE 5—CYSTOMETROGRAMS—Case Reports.



A. Case 7. Hypotonic **B. Case 8. Hypertonic**



C. Case 9. Hypertonic **D. Case 10. Hypertonic**



E. Case 11. Hypertonic and normal. **F. Case 12. Hypertonic**

confirm evidence of prostatic hypertrophy or other pathology. Autopsy confirmed the digital diagnosis of benign prostatic hypertrophy. In this case the clinical diagnosis of hypertrophy of the prostate might have accounted for the patient's bladder symptoms and early in the disease might have obscured the neurogenic cause. The decreased detrusor tonus and large bladder capacity connot be accounted for on the basis of prostatic hypertrophy and therefore the clinical diagnosis of neurogenic dysfunction was confirmed.

Case 8. F. N., age 56, University Hospital, No. 53900.

Neurological diagnosis of metastatic tumor destroying the laminae of the third dorsal segment with cord compression. Cystometric studies (Figure 5 B) showed normal first desire to void in both readings, early and rapid rise in intracystic pressure and high maximum voluntary pressure. A moderate hypertonic bladder in contrast to Case 7 in which compression of the cord caused a hypotonic bladder. Lesions of the cord are more or less unpredictable with regard to the type of bladder disturbance they may cause. The level of the cord lesion, the tracts involved, and the degree of compression of the cord all play a part in determining the type of neurogenic bladder produced.

Case 9. J. K., age 47, Douglas County Hospital, No. 22464.

Neurological diagnosis: combined sclerosis. Because of incontinence of urine, a retention catheter was placed in the bladder. A cystometrogram (Figure 5 C) showed a loss of the first desire to void, and a rather abrupt and rapid rise of intracystic pressure with voiding about the catheter at a volume of 450 cc. No residual urine present. This appears to be a somewhat hypertonic bladder with fair expulsive power. The patient could not be made to cooperate in straining down so that there is no true maximum voluntary bladder pressure determination. Because of the lack of residual urine, and the ability of the bladder to empty itself, and marked epididymitis due to indwelling catheter, the catheter was removed and the patient was able periodically to empty his bladder with little difficulty. Prior to cystometrogram the impression was that the patient required the retention catheter to prevent distension.

Case. 10. A. D., male, age 19, University Hospital, No. 55246.

Complaint of loss of bladder control following a fracture of the T 9-10. Neurological examination showed a complete sensory and motor paralysis below the iliac creasts, no reflexes present, and loss of rectal sphincter tone. A retention catheter was already in place. A cystometric study (Figure 5 D) showed a hypertonic bladder of low capacity with spontaneous emptying, a high intracystic pressure with rapid rise of pressure during filling but with a rather normal first desire to void. There was no maximum voluntary pressure as the patient could not strain down. It was felt that this patient would probably empty his bladder spontaneously if the catheter were removed. This was the case. By massage over the lower abdomen and a forceful attempt to void, the patient could empty his bladder nearly completely. Since this patient was in a cast and it was necessary for him to lie on his abdomen occasionally, at times his cast would become soiled with urine. The danger of increasing decubitus ulceration if allowed to be wet precluded further trial and retention catheter was replaced primarily to keep the patient dry. The patient was discharged from the hospital with a retention catheter. This would have been an ideal case for the use of permanent tidal drainage.

Case 11. J. G., age 35, Methodist Hospital, No. 118119.

On September 1, 1935, fracture of the first lumbar vertebra resulted in complete sensory and motor loss below the level of the lesion. There was immediate complete loss of bladder and bowel control. A retention catheter was placed in immediately and has remained until admission to the Methodist Hospital in January, 1937, sixteen months after injury. In the interval, the patient obtained some function of the muscles of the left thigh, and sensation of pain in the upper thighs occasionally. The patient has had numerous attacks of swelling of the scrotum, probably epididymitis, and shortly after admission left epididymitis developed. Ten days later right epididymitis developed. Cystometrogram was done (Figure 5 E) on the 23rd of January, showed a very spastic bladder, holding only 150 cc. There was a rapid precipitous rise in intravesical pressure, no desire to void, and no maximum voluntary pressure could be obtained. The urine was grossly infected. Tidal drainage was used for one week but because of marked hypertonicity was not entirely successful. X-ray then revealed calculi of the bladder, so tidal drainage was stopped. An intravenous pyelogram showed a stag-horn calculus in the left kidney, good function on each side, and eight calculi in the bladder. Undoubtedly the calculi and gross cystitis accounted for the hypertonic state of the bladder. On March 3, a cystotomy was done and the stones removed from the bladder. During the postoperative course, the gross infection of the bladder improved, the epididymitis subsided, the bladder capacity increased up to 500 cc. On April 7 a cystometrogram (Figure 5 E) was done which showed an entirely different cystometric picture. The intravesical pressure rose slowly, the first desire to void was recorded at 350 cc., and the total bladder capacity had risen to 500 cc. The maximum bladder pressure was 53 mm. of Hg. This was, on the whole, a fairly normal cystometrogram except there was a shift to the right in the first desire to void, probably because there was a partial loss of bladder sensation. Further study of this case showed, when the cystotomy tube was clamped off, the patient was able to void, emptying his bladder completely. On May 8, 1937, the cystotomy tube was removed and the patient now empties his bladder completely and therefore has a functionally adequate reflex bladder.

It is of interest to note that in a series of 32 cases of cord bladder due to fracture of the spine reported by Hansen, twelve cases developed bladder calculi and fourteen cases developed renal calculi. He says that the vast majority of vesical calculi will form between the second and fifth months after injury and rarely form after the sixth month while renal calculi may form years after injury. Certainly in these cases, when infected residual urine is allowed to exist, ideal conditions exist for the development of urinary calculi.

Case 12, R. M., male, age 27, University Dispensary, No. 19535.

Patient complains of numbness of the extremities and partial paralysis of the arms and legs, and urinary incontinence. In July, 1935, patient sustained fracture of the fourth cervical vertebra as a result of a high dive. He was seen first in October, 1936, 16 months after the accident. Neurological examination showed spastic paralysis of the muscles below the level of injury. Cystometrogram October 10, 1936 (Figure 5 F) showed marked hypertonicity, rapid precipitous rise in intracystic pressure, and shift of the first desire to void to the left. The bladder capacity was somewhat increased over normal which is not in agreement with the typical hypertonic bladder. The maximum voluntary pressure is high. At this time the patient had a residual urine of 100 cc. The patient was again seen in March, 1937. His bladder symptoms if anything had become worse. He voided at infrequent intervals and while continent, had to wear a urinal constantly because of marked urgency of urination. He could empty his bladder spontaneously by jumping about and pounding himself on the lower abdomen. Cystoscopic examination in March revealed a typical hypertonic bladder with marked coursely trabeculated bladder wall, several small beginning non-retentive diverticula, and hypertrophy of the interureteric ridge. There was no relaxation of the internal sphincter. The bladder capacity was markedly reduced, to less than 200 cc. and the intracystic pressure, while not measured precisely at the time of cystoscopy, was abnormally high. Treatment since March has consisted of an attempt to control the urinary infection by oral acriflavine and forceful bladder distension and irrigation. Also 2 cc. of tr. of hyocyamus was given for one week (inhibit parasympathetic of bladder emptying nerves) in an attempt to reduce forceful bladder contractions, increase bladder filling and capacity. After this first week trial, the patient was much improved subjectively. Another week of therapy still further improved the patient's subjective symptoms. One week later, no improvement in symptoms but bladder capacity had increased to 450 cc. by mild forceful distension.

Case 13. E. C., female, age 21, University Hospital, No. 56006.

At six years of age cystotomy was done for "pus in the bladder." Continuous draining suprapubic fistula since then. Two years ago began to have low back ache and sensation of bladder distension. She obtained relief from urinary drainage and back ache by catheterizing herself frequently every day. She had had no attacks of chills and fever or renal pain. Neurological examination showed a "saddle type" of decreased sensation, relaxed rectal sphincter and marked deformity of the sacrum. The neurologists recommended operation for relief of nerve compression of the sacral nerves. X-ray showed marked deformity of lower portion of the sacrum and coccyx, and spina bifida occulta. Cystoscopy showed a marked chronic cystitis, marked degree of course bladder trabeculation, contracted internal vesical sphincter, and bilateral ureteral reflux. There was decreased sensation to instrumentation. Marked bilateral hydroureter and hydronephrosis. A cystometrogram, showed a low pressure curve, no maximum voluntary bladder pressure, small bladder capacity, and no desire to void. This was a rather difficult cystometrogram to interpret. The small bladder capacity was no doubt due to the marked cystitis and trabeculation. In other respects it resembled a hypotonic reading. This case represents destruction of the parasympathetic nerves (loss of first desire to void) causing relative sympathetic overbalance. I feel that any attempt to dissect out the sacral nerves from the fibrous tissue in the region of the spina bifida would be unsuccessful because of its many years' duration. However, removal of the sympathetic nerve supply by presacral sympathectomy would seem a more rational procedure. With this thought in mind, preparation of the patient for such a procedure was begun. Because of the high N.P.N. (97 mg.%) and creatinine (6.3 mg.%), with marked bilateral hydroureter and hydronephrosis, it was thought advisable to drain the bladder suprapubically. This was done on February 20, 1936. The N.P.N. and creatinine determinations improved moderately, she was sent home for one year, at which time, February, 1937, the N.P.N. was still up (84 mg.%) and creatinine (4.4 mg.%). Because of a minimum of renal improvement it was felt that this case was not suitable at that time for presacral sympathectomy, and accordingly she returned home with cystotomy drainage.

TREATMENT OF THE NEUROGENIC BLADDERS

Treatment, because of the nature of the various diseases causing bladder symptoms, is frequently unsatisfactory. However, many cases can be improved both symptomatically and cystometrically by simple drug therapy, and by the more radical procedures such as presacral sympathectomy, tidal drainage, forceful dilatation of the bladder, and in the extreme cases, by suprapubic drainage. Drug therapy is limited to the drugs which act upon the parasympathetic or sympathetic nerves. Those acting upon the bladder musculature directly are of little importance. In Figure 6 the more important drugs are given in outline. It is of interest in considering the atropin series to note that the peripheral action of atropin is due to its hyoscyamine content and that hyoscyamine alone acts with twice the intensity of atropin although only with the same central action. Therefore tincture of hyocyanus should be used in place of atropin when action upon the bladder is desired. It is of particular value in the treatment of enuresis together with other therapy. A word of caution is necessary in the use of acetylcholine, a powerful parasympathetic stimulator. Marked reactions may occur, particularly in cases which show a general parasympathetic overbalance. I have only had experience with Merck's acetylcholine mecholyl. It may seem desirable to obtain quick parasympathetic stimulation for the relief of postoperative distension. Prostigmin and pilocarpine are of value, given either by mouth or by hypodermic.

FIGURE 6—USEFUL DRUGS IN NEUROGENIC BLADDER

SYMPATHETIC

INHIBITOR	STIMULATOR
Ergotamine tartrate (Gynergen)	Adrenalin Ephedrine Benzedrine

PARASYMPATHETIC

Atropin (hyocyamine)	Pilocarpin Physostigmin Prostigmin Acetylcholin (Mecholyol)

DIRECT ACTION

Cocaine: Relaxation of detrusor
Pituitrin: Contraction of detrusor
Curara: Relaxation of detrusor

Forceful dilatation of the bladder is helpful in increasing bladder capacity in the hypertonic bladder, and for relieving the enuretic child. It is of interest to note that in the enuretic child the cystometer may be used both for diagnosis and for treatment, that is, by gradual forceful dilatation of the bladder under known intravesical pressure. Tidal drainage has already been referred to in discussing several of the foregoing cases. It is of primary value in the neurogenic bladder associated with fracture of the spine. By the use of the tidal drainage apparatus, the bladder is automatically and constantly irrigated, thus reducing the residual urine to nil. With the ordinary retention catheter there is always a small amount of residual urine, due to the difficulty of placing the eye of the indwelling catheter exactly at the internal vesical sphincter. Because of the constant irrigation of the bladder, infection is reduced or kept at a minimum. Munro has reduced his incidence of infection to 15% which is an enviable record indeed. The tidal drainage apparatus may be made from a few pieces of glass tubing, rubber tubing, a Murphy drip apparatus, and several bottles. For further details, I will refer you to Munro's excellent description. With the tidal drainage set-up it is a very simple matter to incorporate a water monometer, and thus automatically obtain cystometric readings of vesical activity.

I have referred to presacral sympathectomy, a relatively simple technical procedure, and one which has proved of value in numerous cases. Considerable clinical experience is necessary to determine preoperatively which bladder will respond favorably to sympathectomy. Cases of hypotonic bladder with few other neurological signs seem best suited to this procedure.

* * * * * *

This concludes a discussion outlining briefly the importance and difficulties in accurate diagnosis of bladder symptoms. The cystometer is presented as a simple but useful adjunct to other methods of diagnosis; it is also helpful in following the course of neurological diseases, particularly in cord bladder resulting from fracture of the spine; and it is an aid to treatment in enuresis and some cases of hypertonic bladder. While the treatment of the neurogenic bladder is frequently unsuccessful, much can be done to relieve these patients by concerned and conscientious effort.

DISCUSSION

DR. RICHARD YOUNG, (Omaha): The term "cord bladder" has in the past been loosely used by neurologists. Such a term when applied to a clinical condition is as vague and indefinite as the expression "cardiac irregularity" when referring to a disorder of the heart rhythm. Dr. Adams' work on this subject has been of interest to neurologists because he has shown in a concise way with a small amount of equipment that there is a variety in changes of bladder function which are dependent upon the location of the neural lesion. The findings of certain types of dysfunction with definite lesions of the nervous system will point the way to a more effective type of treatment. I hope that in closing the discussion, Dr. Adams will mention a few of the drugs and in what type of bladder dysfunction they are effective. This method also gives an opportunity for obtaining a better understanding of bladder disorders that occur in rare clinical conditions. This past year in a case of orthostatic hypotension a cystometric reading disclosed that the bladder disorder was neurogenic in type and related to an inactivity of the sympathetics. This was of interest because in reviewing the literature of twenty-seven other cases reported, several had been subjected to a prostatic resection. I think this method of investigation will have real value in obtaining a better understanding of the urinary difficulties that come with the neuroses, with postoperative retention and the problems centered about enuresis.

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ARTIFICIAL FEVER THERAPY OF GONORRHEA IN THE MALE: COMPARATIVE STUDY

E. H. Parsons, P. N. Bowman and D. E. Plummer, Denver (*Journal A. M. A.*, July 3, 1937), compared a series of gonorrhea cases in the male treated with artificial fever therapy with a similar series treated by more time-honored methods. The clinical material available for this study consisted of eighty-seven young men, all except one of whom were white. All were between the ages of 18 and 49. Forty-three were treated with fever therapy and forty-four by the usual means. The number of cures in each group of acute gonorrhea was the same, 72.2 per cent, but the fever-treated cases showed no residuals (such as chronic prostatitis) and accomplished the result in approximately one-third the time required in the control group. The control group were under treatment a total of 594 days longer than were the fever-treated group. The number of cured cases of acute prostatitis and complications in the fever-treated group is significantly greater than is the case of the control group. The time required for the treatment of the fever-treated group was approximately one-fourth that necessary in the control group. Cases of acute prostatitis with urinary retention and severe pain, in the fever-treated group, were uniformly rendered asyptomatic in one treatment. In the control group less than one third of the cases of chronic prostatitis and complications were classed as cured, whereas the fever-treated group showed definite cures in all but two cases. These last two cases were twelve and fifteen years, repectively, in duration. The time required for treatment was approximately four times as long in the control group as in the fever-treated group.

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WHO SHALL SPEAK FOR THE DOCTORS?

Early in November, 1937, newspaper headlines the country over rang out the news of a revolt in the American Medical Association. The story went on to explain that following a meeting of a large number of some of the outstanding doctors in the United States the "Committee of Physicians" was formed and after a period of deliberation and study issued a set of principles and proposals* which are in direct conflict with the declarations of organized medicine. Barring gross journalistic exaggerations, the report was fairly accurate. Four hundred and thirty physicians is no small committee, to be sure, but in the light of one hundred and six thousand constituent members of the American Medical Association, the number becomes rather negligible. That there were on this self-appointed committee some outstanding men in the profession is unfortunately true. As often happens, physicians who are preoccupied with teaching, or those who are diverted by investigative research, often attach their signatures absent-mindedly, trusting in the good faith of the solicitor. How many names were obtained as a result of this professorial trait we do not know, but we have reason to believe that there were not a few.

As would be expected, the opponents of private medical practice jumped victoriously into the "revolution." Editors who took the news literally commented in accordance with their mood. Labor leaders hailed it as a final triumph for their "workers." At last every one will get *free* medical care! The American Federation of Labor, ever jealous of solidarity in its own ranks, pronounced the "rebellion" in the American Medical Association a boon to Labor.

The "principles and proposals" are in substance very similar to the resolutions presented by the Delegates from New York in June to the House of Delegates of the American Medical Association. They were rejected as inimical to public good. Apparently the framers of the coveted principles and proposals, fearful of the document's fate if taken through regular channels, resolved to go directly to the "masses." That is not all. Not content with the confusion created by the press reports, the able secretary of the "Committee of Physicians" began to line up the credulous members of the profession. Copies of the "Principles and Proposals" were mailed to physicians East and West, North and South, with a blank attached for signatures endorsing the panacea. Again there were some professors with undaunted faith in their colleagues. Their exact number is not yet known. Nor do we know at present how many of them have since retracted their endorsement.

Without in any way touching on the merits or demerits of these proposals, we are confronted with a vital problem. No organization founded on principles of democracy has the right to deny its members freedom of thought and expression. When, however, a minority group within a democratic association goes into session, adopts a platform and attempts to "put over" this platform on the constituent majority without consulting the authorized representatives of the organization, chaos is the inevitable result.

The American Medical Association is a democratic institution. Its policies are determined by the House of Delegates. These delegates are chosen by the individual state associations, the representatives of which are elected by the members of individual county societies. Any plan or platform worthy of universal adoption is certainly worthy of submission to a regularly constituted council for evaluation. In view of the respectable names that adorn the "Committee of Physicians" it is difficult to explain such hasty action.

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*PRINCIPLES AND PROPOSALS
Committee of Physicians
Principles

1. That the health of the people is a direct concern of the government.
2. That a national public health policy directed toward all groups of the population should be formulated.
3. That the problem of economic need and the problem of providing adequate medical care are not

identical and may require different approaches for their solution.

4. That in the provision of adequate medical care for the population four agencies are concerned: voluntary agencies, local, state and federal government.

Proposals

1. That the first necessary step toward the realization of the above principles is to minimize the risk of illness by prevention.
2. That an immediate problem is provision of adequate medical care for the medically indigent, the cost to be met from public funds (local and/or state and/or federal).
3. That public funds should be made available for the support of medical education and for studies, investigations and procedures for raising the standards of medical practice. If this is not provided for, the provision of adequate medical care may prove impossible.
4. That public funds should be available for medical research as essential for high standards of practice in both preventive and curative medicine.
5. That public funds should be made available to hospitals that render service to the medically indigent and for laboratory and diagnostic and consultative services.
6. That in allocation of public funds existing private institutions should be utilized to the largest possible extent and that they may receive support so long as their service is in consonance with the above principles.
7. That public health services, federal, state and local, should be extended by evolutionary process.
8. That the investigation and planning of the measures proposed and their ultimate direction should be assigned to experts.

WANTED:
SOUND HEALTH INFORMATION

The Speakers Bureau of the Nebraska State Medical Association stands ready to aid the various districts in the state in their efforts to obtain authentic information on principles of health and prevention of disease. The plan is to have speakers designated for the various county medical societies or councillor districts, address both lay and professional audiences in the community in which the meetings are held. This procedure follows the system employed successfully for the past year and a half in connection with the Refresher Courses offered by the committee on Maternal and Child Health of our Society cooperating with the Maternal Child Health program of the State Health Department.

Even though people become conscious of their health only in time of illness, the constant desire to understand normal bodily functions in their various phases should be recognized and fulfilled. The avidity with which the public accepts distorted half-truths dished out in an effort to sell this or that alleged remedy only proves the presence of an unsatiable appetite for education on matters pertaining to health. If blind credulity overwhelms sensible reasoning, it must be recalled that reasoning processes become exceedingly difficult in the absence of basic knowledge involved in the given premise. To John Jones, advertised liver medicine, for example, tends to restore the integrity of a defunct liver. Unless he has some understanding of the structure and functions of the organ and its possibilities for pathological involvement there is little likelihood of argument over the veracity of the advertiser's claims. By similar analogy, if Mrs. Jones were aware of nature's aging phenomena, the chances are that she would have less confidence in "wrinkle creams" as a means of retaining (in not a few instances attaining) her schoolgirl complexion, and would pay more attention to her bleeding cervix in an effort to prevent early death from cancer.

Some few there are among our colleagues who maintain that their patients already know more than is good for them. By what standards such public knowledge is measured has never been revealed. The undeniable fact remains that the majority of lay people are woefully lacking in comprehension of human structure and physiology. We believe, too, that the present generation is not only interested, but indeed has ample capacity for legitimate education. Our experiences with the Refresher Courses thus far, although there are no statistical figures yet available, would certainly justify our confidence in such public intelligence. The Speakers Bureau aims to extend this service to communities and thereby fill this vital need. We hope that the physicians will avail themselves of the opportunity of serving their respective districts.

ABOUT THE ANNUAL MEETING

The Annual Meeting of the Nebraska State Medical Association will be held in Lincoln on April 26, 27, 28. On April 25, there will be the usual day of golf. This meeting promises to be one of the most interesting we have had, with something doing every minute from the kick-off to the final gun. More guests than usual will be on the program. There will be formal papers on cancer of the stomach, intestinal obstruction, plastic surgery, sex hormones, heart disease and other interesting and live subjects. There will be a symposium on venereal disease and one on anterior poliomyelitis. As has been the custom in the last few years, luncheons and evening sessions will fill in the spare time. You can come and be kept busy every minute.

There are still some places on the program for papers by members of the Association. If you have something to contribute please submit your title to Dr. Adams before March first, and you will be notified soon after if your paper has been accepted. Every year the committee has had to refuse certain papers for they must be chosen to make the best possible program. We hope you will submit a title this year.

Another feature of the meeting this year is the Scientific Exhibit. We hope to see this exhibit grow each year and hope that everyone will consider seriously making a contribution to this valuable part of the meeting.

Let us make this meeting a great success. Make your contributions to the meeting by offering a paper or an exhibit and above all by coming early and staying late. We know your time will be most fruitfully spent.

Roy H. Whitham, M. D.,
for the Program Committee.

COMMITTEE OF PUBLIC HEALTH AND MEDICAL EDUCATION NEBRASKA STATE MEDICAL ASSOCIATION AND NEBRASKA STATE PUBLIC HEALTH DEPARTMENT

SPEAKERS BUREAU

1031 Medical Arts Building, Omaha, Nebraska
Telephone—Jackson 2721

The Speakers Bureau of the Nebraska State Medical Association and Nebraska State Public Health Department has opened an office and is now ready to care for the needs of both the layman and physician in the shaping of educational programs. A full-time secretary has been installed, and there is no reason why requests for programs cannot, from now on, be handled promptly if the members give the Bureau ample time to obtain speakers qualified to discuss the proposed program subjects.

As a reminder it might be well to quote from the resolution as passed by the House of Delegates during the 1937 state convention the functions of the Committee of Public Health and Medical Education.

"It shall be the duty of this Committee to direct the educational policies of the Nebraska State Medical Association referable to physicians and laymen in its health education program, and to cooperate with the Nebraska State Health Department, or any other organization interested, in matters pertaining to health." As a result of this resolution, the Committee has found it necessary to open an office, which will be headquarters for the Speakers Bureau.

The Speakers Bureau will attempt to care for the following activities:

1. County and District Medical Societies

a. Arranging program for any one meeting or planning programs for the year's meetings in advance.

b. Arranging for symposium.

c. Arranging post-graduate courses.

d. Arranging for radio talks by physicians.

2. Educational talks to laymen

a. Any society or organization known to be contemplating a meeting might be advised of this service, and a physician speaker will be obtained to discuss a subject of lay interest without charge.

Note: It is hoped that in scheduling a good many of the lay talks, the afternoon may be turned over to the laymen, and that same evening the same speaker might talk before the local medical society or group.

The following information should be forwarded when requesting speakers for programs:

1. Date and time of meeting.
2. City or town.
3. Meeting place.
4. Name of society requesting speaker.
5. Suggested subjects for address.
6. Time allotment.
7. Do you have projector and screen necessary for lantern slides or moving pictures?

County medical societies and individual physicians are urged to use the Bureau for program make-up, not only for the society, but especially for lay groups. Mail requests to Dr. J. D. McCarthy, Speakers Bureau, 1031 Medical Arts Building, Omaha, Nebraska.

PLATFORM OF THE COMMITTEE ON MATERNAL AND CHILD HEALTH OF THE NEBRASKA STATE MEDICAL ASSOCIATION

In the year 1935 Nebraska had 134 maternal deaths out of 23,326 births. In 1936 there were over a thousand deaths of babies less than a year old. While no definite scientific data on these fatalities are available, it is reasonable to believe that some of these lives may have been saved under better medical supervision. At the last annual meeting of the Maternal and Child Health Committee of the Nebraska State Medical Association, the following platform was adopted in an effort to bring about—

a. A reduction in maternal and infant mortality.

b. Improvement in infant and child health.

To reduce maternal and infant deaths, the Committee recommended that:

1. Emphasis be placed on adequate, rather than on minimum standards of prenatal care. An outline of practical care of the pregnant woman will

be mailed shortly to each member of the Nebraska State Medical Association.

2. Every County Medical Society include in its program "Refresher Courses" on obstetrics and pediatrics. The Committee on Maternal and Child Health is equipped to a certain extent to furnish the personnel for such courses to Councilor Districts desirous of such postgraduate instruction.

3. In each County of the State one or more large public meetings be held annually to bring to the attention of the people the need for saving the lives of mothers and babies. The aid of the Woman's Auxiliary to the Medical Society may be enlisted to make these lay gatherings a numerical success. The Speakers' Bureau of the State Medical Society will supply speakers for the occasion.

To improve infant and child health it is suggested that in addition to the foregoing recommendations:

1. Physicians impress upon parents the importance of periodic follow-up on the rapidly growing infant.

2. That in this follow-up the baby be examined carefully, weighed and measured, and due attention be paid to prescribing accessory foods in the form of fruit juices and cod liver, or other vitamin-rich, oils.

3. That the nutrition of the older child be recognized as the important factor in his growth and future well being. The dietary therefore must receive due consideration in the individual child.

4. That preventive inoculations be advised for every child. Immunizations against diphtheria, whooping cough or smallpox may be begun as early as six months.

5. That in a regime of child care habit formation constitutes a vital part of health and the emotional side of development be emphasized along with other phases of growth.

THE HAZARD OF MATERNITY AND EARLY INFANCY

The problem of maternal care and care of the newborn continues to be a matter of grave concern to the people of this country. No matter what method of statistical procedure is used to assign cause of maternal deaths, the United States retains an exceedingly high maternal mortality rate as compared with other countries. In 1935 the number of maternal deaths due directly to pregnancy and childbirth was 12,544. Additional deaths of pregnant women due to other primary causes raised the total number to 14,296. The number of stillbirths in 1935 was 77,119, and the number of babies dying in the first month of life as the result of causes arising during pregnancy or at time of delivery was 56,262.

This means that the total number of deaths of mothers, stillbirths, and deaths of babies in the first month of life from causes associated with maternal conditions was 147,677 for the single year of 1935.

The steadily declining birth rate makes this loss of life of even greater significance and gives further emphasis to efforts toward prevention.

EDITORIAL PARAGRAPHS

A recent report of a study of one thousand patients with syphilis states that 12.7% have aortic disease.

Contrary to prevailing impression, there is no definite evidence that any of the acute contagious diseases of childhood have a deleterious effect on tuberculosis lesions of the lungs of children so affected.

Birth trauma is the largest single causative factor in fetal mortalities according to Dr. P. F. Williams. Reduction of stillbirths may be expected only under improved ante-partum and intra-partum care.

The majority of infants born of mothers who, during pregnancy were receiving calcium and viosterol in some form, show increased bone density in the ribs, the parietal bones, and the epiphysis at the knees.

Young children who stutter are not different from their non-stuttering fellows. Parental over-anxiety expressed in nagging and other methods of attempted reform is usually a factor in habit formation.

The medical library of the late Dr. F. A. Long of Madison has been given to the University of Nebraska Medical School. Sometime before his death, the doctor had given his medical instruments to the University to be used in a collection of instruments of pioneer and present days in the state.

The U. S. Department of Agriculture, following a survey of medical services in rural districts, states, according to the Associated Press, that in some areas there is one doctor to every thousand or fifteen hundred people. In some of the populous communities the ratio of physicians to population is 1 to 500.

Referring to the "Bone Bill," the Syracuse (N. Y.) Post Standard recently stated: "Medical expenses are the greatest cause of financial trouble in this country. They are sudden, unexpected; and they upset budgets that have been balanced carefully otherwise. It is only just and fair that money spent for these purposes should not be taxed . . . The demand for such exemptions should be carried to Washington." A bill seeking these exemptions is now in Congress. If passed it would permit deductions for medical and dental services up to $250 per year.

AUXILIARY NEWS

January 3, 1938, the Cheyenne-Kimball-Deuel County Medical Society and Auxiliary members enjoyed a 6:30 dinner at the Wheat Growers Hotel at Kimball with Dr. R. D. Sinclair as host. The ladies were entertained in the home of Mrs. D. Fleet instead of Mrs. R. Sinclair, who is confined to the hospital. The next meetting will be held at Sidney, Nebr., Feb. 7, 1938.

* * * * * *

The Lancaster County Medical Auxiliary members met Tuesday night, January 4, 1938, for their annual bridge party. Three lovely prizes were presented to the ladies holding the three high scores. Mrs. B. J. Ferciot of Canton, Ohio, was guest of the evening.

* * * * * *

A special mid-year meeting of the Board of Directors of the Woman's Auxiliary to the Nebraska State Medical Association will be held on Friday, January 14th, at eleven A. M. at the Hotel Cornhusker, Lincoln, Nebraska.

* * * * * *

On November 18th, the Woman's Auxiliary to the Tri-County Number 1 Medical association met at the home of Mrs. J. E. Gelow, Thursday evening for a buffet dinner served by the hostesses, Mrs. Hombach, Mrs. Emil Johnson, Mrs. R. C. Woodruff, Mrs. W. J. Arrasmith, Mrs. M. R. Piersol and Mrs. J. E. Gelow.

After dinner, Mrs. H. Royer, president, called the meeting to order. Mrs. Earle Farnsworth conducted an impressive memorial service in memory of Mrs. W. D. McGrath, whose passing is keenly felt by the members of the Auxiliary, by reading Tennyson's "Crossing the Bar," and the observance of a moment's silence. Mrs. McGrath was president of this organization for the year 1934-35.

The regular business was transacted, with the announcement of the December meeting to be held at the St. Francis hospital. A circular letter consisting of a message of the state president, Mrs. Earle Farnsworth, was read. She was leaving at the close of the meeting for Chicago to attend the national board meeting of the auxiliary.

Rev. Lee Heaton, of the Episcopal church, gave a very interesting review of the book, "Dr. Serocold," by Helen Ashton.

* * * * * *

December 16th, 1937, the members of the Tri-County Medical Association and the Auxiliary met at a dinner meeting in the Stratton Hotel.

ANNOUNCEMENTS

THE A. M. A. CONVENTION AT SAN FRANCISCO

Make plans now to attend the Convention of the American Medical Association in San Francisco, June 13 to 17. Hotel reservations should be made early. Write to Dr. Frederick C. Warnshuis, 450 Sutter Street, San Francisco, Calif., stating the nature of accommodations you desire.

* * *

The Western Surgical Association will hold its next annual convention in Omaha in December, 1938.

* * *

VACANCIES IN CCC

"There are a few vacancies at present and in prospect for duty with the CCC in this military district; i.e., Seventh Corps Area. This medical service is rendered by Reserve Officers or by civilian physicians, who enter into contract with the Surgeon, Seventh Corps Area. Anyone interested should address the Surgeon, Seventh Corps Area, Federal Building, Omaha, Nebraska."

* * *

A PLEA FOR OLD FORCEPS

If you have any old, or new, forceps that you would like to donate to the East African Mission Service send them to Rev. John D. Pointer care of the Board of Foreign Missions, 150 Fifth Ave., New York City, New York.

Rev. Pointer, Missionary of the Methodist Episcopal Church in the Limpopo District, Portuguese East Africa has eighty-five native preachers on his staff. One of the several side lines of the missionary service is that of pulling the aching and decayed teeth of the African Natives. Thousands of these people suffer from all kinds of tooth trouble but they have no knowledge of dentistry. Unless given relief by the Missionaries they must resort to self treatment which usually consists of prying the offending tooth out with a nail or knocking them out with spikes and hammers.

Rev. Pointer writes that he is badly in need of ten or a dozen pairs of forceps with which to equip his preachers because their native charges are entreating their help.

* * *

A LETTER FROM THE PRESIDENT OF THE AMERICAN SOCIAL HYGIENE ASSOCIATION

Syphilis is in the headlines, on club programs, on the screen, on the air, on bookshelves, on the Public Mind!

What next? Will the nation merely talk and not act? Will nearly twenty million people continue to suffer with syphilis and its twin peril gonorrhea and threaten other millions? Shall we keep on letting 500,000 new cases of syphilis appear each year? Thousands more to become needlessly blind or crippled? Tax-payers to bear the burden of caring for the ten per cent of inmates of mental institutions who are there because of preventable end results of syphilis? Shall sixty thousand syphilitic babies be born each year?

Not if the Association's Anti-Syphilis Committee can summon support needed to rally the nation against these vicious and expensive diseases. Experience in other countries shows that these maladies can be checked. American medical science is competent to do its part. Syphilis and Gonorrhea Can Be Conquered, If—

1. Everybody learns how dangerous they are.
2. Those infected are taught to seek treatment early.
3. Proper treatment is assured for all who need it.
4. Health departments and cooperating agencies are furnished with enough money and personnel to do what is necessary.

Surgeon General Parran looks to this Association to lead the way in "telling all the people." Its National Anti-Syphilis Committee, headed by General John J. Pershing, is charged with this duty and is raising $500,000 required by the Association. The Second National Social Hygiene Day, February 2, 1938, will draw attention to a most tragic aspect of syphilis,—its attack on young men and women.

Ray Lyman Wilbur, M. D., President.

* * *

THE A. P. A. A.

The American Physicians' Art Association, a national organization of medical men who have ability in the fine arts, will hold a first national exhibition in the San Francisco Museum of Art, San Francisco, California, in June, 1938. (The American Medical Association Convention is June 13-17 in the same city). The American Physicians' Art Association already has an outstanding membership. There are three classifications for membership: active, associate, and contributing. The first annual exhibition promises to be of unusual interest with entries to be accepted (after jury selection) in the following classifications: oils, watercolors, sculpture, photography, pastels, etchings, crayon and pen and ink drawings (including cartoons), wood carvings and book bindings. Scientific medical art work will not be accepted. The exhibition is not limited to first showings. All entries close April 1, 1938. Any physician interested should communicate at once with the Secretary of the American Physicians' Art Association, Suite 521-536 Flood Bldg., San Francisco, California.

Smith: "Jones went to see the doctor yesterday."

Brown: "Yes? What seems to be the trouble?"

Smith: "Syncopation."

Brown: "And what is that?"

Smith: "An uneven movement from bar to bar."

Surgeons were greatly surprised to find a bolt, nut and washer in the brain of a Michigan man. It must have been their first experience in opening up a politician's head.

(STATE) DEPARTMENT HEALTH
Lincoln, Nebraska
January, 1938

MORBIDITY SUMMARY—PRINCIPAL DISEASES

	1937			1936		
	Dec.	Nov.	Total to Date	Dec.	Nov.	Total to Date
Chicken-pox	239	111	1216	160	98	1380
Diphtheria	21	22	109	17	11	217
Influenza	0	17	468	0	0	34
Measles	8	8	468	8	8	1178
Meningitis, C. S.	2	3	38	2	2	33
Poliomyelitis	2	13	218	1	4	24
Scarlet Fever	146	117	2164	194	114	4223
Smallpox	5	1	169	12	4	764
Tuberculosis	10	18	197	19	18	232
Typhoid Fever	2	5	25	2	0	27
Whooping Cough	45	66	587	19	27	470
Gonorrhea	88	144	1108	86	63	834
Syphilis	70	104	938	47	33	365

REPORT OF PLANS AND PROGRESS OF THE DIVISION OF MATERNAL AND CHILD HEALTH, NEBRASKA (STATE) DEPARTMENT OF HEALTH

REFRESHER COURSES

December, 1937, closed the sixth month of the fiscal year 1938. During the current fiscal year refresher courses were continued and one guest speaker was brought into the state to discuss obstetrical subjects.

This office is in touch with several of the councilors regarding courses during the next two quarters. Three special lectures have been arranged for Dundy County. The following dates and subjects have been approved by the respective committees:

Dr. H. B. Hamilton, "Food With Relation to Health and Disease," Benkelman, January 10, 1938.

Dr. E. S. Wegner, "Infectious Diseases," Benkelman, March 14, 1938.

Dr. E. R. Hays, "Health Problems of the School Child," May 9, 1938.

This office is cooperating with the State Medical Association in the development of plans for a guest speaker in pediatrics having in mind the urgent need of acquainting the public with the preventive aspects of this important subject.

MATERNAL AND CHILD HEALTH COMMITTEE MEETS

On December 23 the Maternal and Child Health Committee met in Omaha. Those present were Dr. Fouts, President of the Nebraska State Medical Association; Dr. P. H. Bartholomew, Director of Health; Mr. M. C. Smith, Executive Secretary, and Dr. Herman Jahr.

The meeting was of unusual interest because of the differences in viewpoint expressed by various groups.

Dr. Fouts reported on progress already made in the developing of a large representative group of physicians to serve as contact men for personnel in the field staff of this divisoin. Space for the publication of the names of this committee has been promised by The Nebraska State Medical Journal in the next issue.

Mr. M. C. Smith reported on refresher courses held during 1937 and offered some constructive suggestions in connection with the program for 1938.

Dr. Earl Sage, Chairman of the Committee, had developed a carefully prepared agenda for the meeting. This included consideration by this committee of certain activities carried on in neighboring states. A tentative program was submitted to the committee for the purpose of stimulating thought and provocating discussion. The discussion became quite animated and included definite expressions in the realms of economics and genetics. Careful thinking by professional people in these related realms is more to be desired now than ever previously. Eventually a program was drafted and this program is now available for publication in the state journal.

DENTAL EDUCATION

Two films on dental health were shown by Dr. Thompson at the annual meeting of Organized Agriculture at the Agricultural College on December 9. About 400 mothers from various parts of Nebraska were present. This opportunity was used to stress the importance of adequate nutrition during pregnancy as a preventive measure in the decay of teeth in young children.

In Broken Bow on December 16 Dr. Thompson discussed dental problems with 285 boys and girls with the cooperation of Mr. Lehman, superintendent of schools.

On making a return trip to Wayne County, Dr. Thompson reports the following type of cooperation. Mr. Smith, superintendent of the Wayne schools, said: "The school is yours. Go where you wish and talk when you want to. Visit all of the rooms or part of them." The teachers showed evidence of awareness of advantages of a dental health program. The children seemed reasonably informed regarding nutrition and mouth care. In the first seven grades there were 177 children and of these more than 100 had returned cards signed by dentists indicating that their mouths were in a healthy condition. Local plans are also in the process of development for the purpose of taking care of the expenses involved for a number of indigent children. Of particular interest was the fact that efforts are being made to reach parents with the knowledge needed for dental health. Definite information as to the importance of nutrition will be of particular value to expectant mothers and the parents of preschool children. Dentists are developing tooth brush clubs, not in the interest of the tooth brush but as a means of stressing adequate nutrition.

Expressions of interest in, and application of, dental health knowledge was to be found at the Wayne Normal training school.

NEW COMMUNITY PROGRAMS

Inquiries from local communities expressing interest in the development of local Maternal and Child Health programs have already caught up with the available public health nursing personnel. As the local plans for Maternal and Child Health activities develop, this office is available for consultation. The temporary use of material now in our files may perhaps save other counties from some unproductive expenditures.

THE SOCIETIES

The **Lancaster County Medical Society** met December 21, 1937, at the society rooms, Dr. A. D. Munger presiding. About fifty members were present.

This meeting was devoted to the Report of the Economics Committee, the annual reports of the various officers for the year 1937, and the election of officers for the year 1938.

Following the 1937 reports, the election of officers for the year 1938 took place. The following were elected: Dr. C. F. Andrews, President; Dr. F. D. Coleman, Vice-President; Dr. E. E. Angle, Secretary; Dr. W. W. Carveth, Treasurer; Dr. H. W. Orr, Historian; Dr. E. W. Rowe, Censor (3 year term, 1938-40). Delegate to Nebraska State Medical Association, 1938-40, Dr. J. E. M. Thomson. Alternate to Nebraska State Medical Association, 1938-40, Dr. W. E. Becker.

A motion made and seconded for a vote of thanks to the outgoing president, Dr. A. D. Munger, for his services for 1937, was carried unanimously.

Motion for adjournment, carried.

—O. A. Reinhard, M. D., Secretary, 1937.

The **Lancaster County Medical Society** met January 4th in the Society Rooms with about fifty-five members present.

The meeting was called to order by the president, Dr. C. F. Andrews.

Clinical Case of Exstrophy of the Urinary Bladder was presented by Dr. E. E. Angle.

First paper of the evening was presented by Dr. E. M. Hansen, entitled, "The Experiences With Induction of Labor." The paper was discussed by Drs. H. E. Harvey, R. E. Garlinghouse, H. S. Morgan, I. C. Munger, Jr., and Grace Loveland.

The second paper entitled, "Anomalies of the Lower Urinary Tract" was presented by Dr. E. E. Angle, and discussed by Drs. A. D. Munger, E. W. Hancock, H. W. Orr, and I. C. Munger, Jr.

New committees for the year were appointed by the president.

The meeting adjourned to view motion pictures showing the Japanese invasion and bombing of China, presented by Charles Wertman of Milford.

—Dr. E. E. Angle, Secretary.

The **Five-County Medical Society** met at Wayne on December 16. Dr. Stuart H. Cook was elected president and Dr. G. E. Peters secretary-treasurer.

The **Boone County Medical Society** held its meeting at Albion December 23. Dr. W. J. Reeder of Cedar Rapids was elected president, Dr. F. J. McRae, secretary-treasurer.

The **Lincoln County Medical Society** met December 23rd at North Platte. Dr. Edward Stevenson of North Platte was elected president, Dr. Leo Hombach, vice-president, Dr. H. H. Walker, secretary-treasurer. Dr. Harvey Clark was chosen delegate to the state convention, and Dr. C. F. Heider as alternate. Dr. T. J. Kerr was elected censor for a three year term.

The **Tri-County Medical Society** met at the Hotel Pathfinder in Fremont on December 20. Dr. Geo. Haslam was elected president, Dr. Guy Seward, vice-president, and Dr. H. H. Morrow, secretary-treasurer.

The **Burt County Medical Society** met on December 23, 1937, at Lyons, for the annual election of officers. Dr. F. M. Heacock was elected president, Dr. W. C. Keettel, vice-president, and Dr. H. W. Benson, secretary.

The **Howard County Medical Society** met at St. Paul on December 22. Dr. P. M. Pedersen of Dannebrog was elected president, Dr. M. O. Arnold, vice-president and Dr. E. C. Hanisch, secretary-treasurer.

The **Phelps County Medical Society** met at Holdrege December 27. Dr. F. A. Brewster was elected president, Dr. G. W. Clark of Bertrand, vice-president; Dr. H. A. McConahay, secretary. Delegate to the state convention is Dr. M. B. Wilcox and alternate Dr. Theo. Peterson.

At a meeting of the **Keith-Perkins-Garden County Medical Society,** held in Ogallala on December 8, the following officers were elected: Dr. S. M. Weyer, president; Dr. E. A. Harvey, vice-president, and Dr. H. A. Blackstone of Lewellen, secretary-treasurer.

The **Six County Medical Society** held their regular monthly meeting in the State hospital at Norfolk, Dec. 15, 1937. The meeting held under the chairmanship of Dr. Charlton, superintendent of the hospital.

Members met in the administration hall and assembled to the dining room. At 7:30, an elaborate banquet was served by the nurses. Inmates of the hospital furnished music for the doctors.

Program for the evening was held in the auditorium. Exhibits of the needle craft work made by the inmates was observed.

Speakers on the program were Dr. Norman Reider of Topeka, Kansas, who gave a talk on, "Significance of a Headache." Dr. Richard F. Riche of Cincinnati, O., State Representative of Child Welfare in Nebraska, spoke on, "Child Welfare Work in Nebraska."

HUMAN INTEREST TALES

Dr. R. T. Jones has moved from Wilcox to McCook.

Dr. B. D. Kantor, formerly of Sargent, Nebr., has moved to Fairbury.

Dr. Hubert F. Green of Omaha is opening his first private office in Scribner.

Dr. F. L. Wilson, formerly of Stuart, has opened an office at Sioux City, Iowa.

Dr. Harold Simons of Chicago has joined the staff of the Grand Island Clinic.

Dr. G. A. Heath of Fairbury, who has been seriously ill, is reported improving.

Dr. R. A. Marble has returned to his office following his recovery from a long illness.

Dr. W. A. Cassidy has returned to Omaha after a two weeks' stay at Tucson, Ariz.

Dr. J. T. Maxwell of Omaha recently returned from a three week cruise of the Caribbean countries.

Dr. John C. Eagan addressed the Madison Woman's Club on January 6th. His topic was Cancer Control.

Dr. Charlotte Seiver talked before the Fremont Business and Professional Women's Club on January 3.

Dr. R. H. Easton of Lincoln has moved to Bennet where he will take over the practice of Dr. R. J. Cameron.

Dr. D. H. Westfoll is moving from Polk, where he has practiced for over thirty years, to establish a new practice in Springview.

Dr. V. M. Winkle has returned to Norfolk after spending several months attending various clinics. He will office with Dr. A. J. Schwedhelm.

Dr. and Mrs. C. G. Weigand of Omaha have moved to Indianapolis, Ind., to make their home. Dr. Weigand has accepted a position with the Lilly Co.

Dr. H. R. Palmateer and family have left Madison for a several months' stay in New Orleans, where the doctor has accepted a study post at the Medical Center.

Dr. Edmund G. Zimmerer, of the United States Public Health Service and the Nebraska State Health Department, spoke on social diseases before the Lexington Woman's Club recently.

Dr. Otis R. Platt was elected chief of staff of the St. Mary Hospital of North Platte. Other officers are Dr. H. A. McDonald, associate chief; Dr. G. F. Waltemath, secretary, and H. L. Clark, a member of the executive committee.

BIRTHS

Dr. and Mrs. Matthew J. Severin of Omaha, daughter, born Christmas morning.

A son was born to Dr. and Mrs. J. Whitney Kelley January 2.

MARRIAGES

Dr. Clark Rominger, a former intern at the Methodist hospital, and Alice Jensen, a supervisor at the hospital, were married at Valley on December 30.

Marie Bay, a graduate nurse and supervisor at Methodist hospital, and Dr. Herbert Cooper, a former Methodist hospital intern, were married on January 9.

Miss Ruth Morse to Dr. B. C. Cammack of Hollywood, Calif. They will reside in Hollywood. Dr. Cammack is an ex-Omaha resident.

Dr. R. Bruce Eldredge and Vera Hathaway, formerly of Omaha, were married at Tia Juana, Mexico, on August 28. The couple is living in West Los Angeles.

DEATHS—NEBRASKA

Dr. H. B. Boyden, Grand Island. Born in Ravenna, 1889, graduated from Rush Medical College in 1911. Owner of the Grand Island General Hospital. Died of heart disease December 9, 1937.

OTHER DEATHS

Dr. Richard H. Jaffe, Chicago, Professor of Pathology at Rush Medical College, pathologist to Cook County Hospital. Died at the age of 49 of coronary heart disease, December 17, 1937. Dr. Jaffe will be remembered by many Nebraskans as an excellent teacher. His lectures at the Omaha Midwest Clinical Society will linger in our memories for years to come.

C. Ulysses Moore, Portland, Oregon, was found by his wife dead from carbon monoxide poisoning in his garage recently. A tire on his automobile had been partly taken off. Dr. Moore was one of the outstanding pediatricians in this country, and was widely known for his researches in nutrition and rickets.

TUBERCULOSIS ABSTRACTS

FALSE PROVERBS ABOUT TUBERCULOSIS

"The blood comes from the back of the throat." I could not say how many times patients have mentioned to me that they have been told this, after an attack of hemoptysis. As an early symptom of tuberculosis, this is a most valuable warning sign. It should bring to light the nature of the trouble from which the patient is suffering. By far the most common cause of blood spitting is pulmonary tuberculosis, and however slight it may be, this disease should always be considered the cause—unless it can be proved to be something else.

"You should be cured in the place where you will have to live." It is very hard to understand a sensible person making such a statement. Surely the patient should be placed in those circumstances where healing can best take place. By healing is meant the formation of fibrous tissue, and the shutting off of the diseased areas of the lung, by the contraction and cicatrization thus obtained. It is difficult to fathom why a lung cicatrized in one part of the world should be likely to break down when the patient returns to another. Frequently, patients who come to Switzerland make very rapid apparent recovery. The cough and sputum disappear, the weight goes up, and the tired languid feelings are replaced by those of well-being and fitness. It is difficult for such people to realize that their cure is not completed, and they often return to England after a few months, to begin work, only to break down again as they are not yet sufficiently stable in health for normal life. A year or two, instead of a month or two, might have made permanent cures of them.

"You can be cured just as well on a balcony at home as in Switzerland." The futility of this remark is very obvious when one considers that it is made to people living in large industrial towns as well as in country places. The smoke-laden air of towns with its dust and micro-organisms, can hardly be compared with the pure, thin, invigorating air of the Alps, yet I have heard this statement from many patients to whom it has been told, even so recently as this year.

"You are not ill enough to go to Switzerland." Leaving Switzerland out of the question altogether, it is in the early case, where the lesion is still small and localized, and the patient's health and resistance are good, that the most energetic measures should be taken. The patient should be clearly informed regarding his disease, and told that his best chance of getting completely cured is to spend a long time, if it can possibly be managed, over his treatment. Being told that he is not ill enough to do this only serves to give him a false sense of security, and may lead to much disappointment and ultimate loss of the chance of real recovery.

"You must not go to an altitude if you are spitting blood." There is some foundation for the popular idea that a mountain climate is not suitable for cases in which hemmorhage occurs. It is undoubtedly true that patients such as elderly people with high blood pressure, who are chronic fibrotic cases with cavitation, will probably not do well if they are inclined to hemmorrhage. For the early, active stages, however, the mountain climate is not contra-indicated at all. In such types, blood-spitting is simply an indication of activity of the disease, and when this is arrested, the hemoptysis stops.

"You must not go to an altitude as you have a weak heart." This saying, as in the case of the patient who is spitting blood, has some truth in it. I have met patients who have been told that they should not go above, say, two or three thousand feet, but who, in spite of this, have done so in fear and trembling, and have been amazed to find that they have become stronger, and better in every way, in a short time. If, however, there is organic heart trouble, especially if poorly compensated, an altitude of over five thousand feet should not be attempted. In those types of cardiac weakness due to general debility, convalescence from disease, and flabbiness of the heart muscle—all parts of the patient's feeble general condition—there is no contra-indication to the mountains, and such cases usually do very well.

"You ought to go and sit about in the sun." Persons afflicted with pulmonary tuberculosis are, even now, sometimes told to go to some sunny part of the world, and to sit about, or lie about in the sun, and "they will soon be all right again." It cannot be too strongly emphasized that indiscriminate and uncontrolled use of sunbathing in pulmonary tuberculosis is very dangerous, and should as a rule be prohibited. If applied in the wrong manner and to the wrong type of case, sun-bathing may easily set up flaming activity in a lung where the disease was perhaps latent or only smouldering, and would have settled down under ordinary treatment. Whilst very beneficial in cases of surgical tuberculosis, it is only in special cases of pulmonary tuberculosis that sun treatment should be advised, and even then it should be carefully watched and controlled.

Many of the above statements which one hears so often, are misleading, and in some cases really dangerous. Some of them lull the patient into a sense of false security, whilst others definitely deter him from taking those measures which he feels himself would be best. In any case they are mostly sayings which should be exploded.

BOOKS RECEIVED

"THE PHYSICIAN'S BUSINESS," Practical and Economic Aspects of Medicine, by George D. Wolf, M. D., Attending Otolaryngologist, Sydenham Hospital, New York City, Attending Laryngologist, Riverside Hospital, New York City, Fellow, New York Academy of Medicine, Fellow, American Medical Association, etc. Foreward by Harold Rypins, A. B., M. D., F. A. C. P. 57 Illustrations in the test. Sixteen-mo. 384 pages. J. B. Lippincott Co., Philadelphia.

"MACLEOD'S PHYSIOLOGY IN MODERN MEDICINE," Edited by Philip Bard, Professor of Physiology, John Hopkins University School of Medicine, with the collaboration of Henry C. Bazett, Professor of Physiology, University of Pennsylvania, George R. Cowgill, Associate Professor of Physiological Chemistry, Yale University School of Medicine, Harry Eagle, Passed Assistant Surgeon, United States Public Health Service and Lecturer in Medicine, Johns Hopkins University School of Medicine, Chalmers L. Gemmill, Associate in Physiology, Johns Hopkins University School of Medicine, Magnus I. Gregersen, Professor of Physiology, College of Physicians and Surgeons, Columbia University; Formerly Professor of Physiology, Universtiy of Maryland School of Medicine, Roy G. Hoskins, Director of Research, Memorial Foundation for Neuro-endocrine Research; Research Associate in Physiology, Harvard Medical School; J. M. D. Olmsted, Professor of Physiology, University of California; Carl F. Schmidt, Professor of Pharmacology, University of Pennsylvania. Eighth Edition. Thirty-two-mo. 1051 pages. The C. V. Mosby Company, St. Louis. 1938. Price $8.50.

TO PRESERVE BOOK BINDINGS

Those valuable leather bindings on office records, research reports and fine books are not likely to crack and disintegrate if they are regularly treated with glycerine. Just wipe over the leather surfaces lightly with a clean cloth dampened with glycerine, let it soak in for a few minutes, and then wipe off with a dry cloth.

Similarly, other leather covered objects, such as chairs, desk accessories, and such may be preserved in their original supple condition.

This method of keeping leather soft is well known to the leather industry, which employs glycerine in many phases of manufacture to render hides pliant and to keep skins soft.

RECENT STATEMENT BY THE JUDGES OF THE MEAD JOHNSON VITAMIN A AWARD

"The Vitamin A Award offered by Mead Johnson & Company was supposed to be made on the basis of papers published or accepted for publication by December 31, 1936. The judges of this award, meeting in New York, June 4, 1937, feel that its presentation at this time is not warranted since no clinical investigation on vitamin A has yet been published which completely answers any of the objectives of the original proposal. The judges, therefore, agreed to defer further consideration of the granting of this award until December 31, 1939. This action was taken because of the existence of pronounced differences of opinion among investigators as to the reliability of any method yet proposed for determining the actual vitamin A requirements."

STATEMENT BY MEAD JOHNSON & COMPANY

In view of this action by the judges of the Mead Johnson Vitamin A Award, and as an earnest of our good faith in the matter, we have segregated from our corporate funds on deposit with the Continental Illinois National Bank & Trust Company of Chicago, the sum of $15,000. This cash deposit has been placed in escrow and will be paid promptly when the board of judges decides on the recipient of the Main or Clinical Award. The Laboratory Award of $5,000 was made on April 10th, 1935.

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THE DIAGNOSIS AND TREATMENT OF INFECTIONS OF THE UPPER URINARY TRACT*

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INTRODUCTION

Invasion of the upper urinary tract by pyogenic organisms occurs so commonly as to interest every physician. It tends to occur most often in certain age groups, being frequent in infants of both sexes, and traditionally more so in girls. It is a common complication of pregnancy and of the puerperium, and affects the adult male most often in the prostatic age.

The frequency of infection is due to the exposed position of the kidney with respect to organisms. Its rich blood supply leads any organism which enters the blood stream to it; its end arteries frequently arrest bacterial emboli; the lower urinary tract is exposed to contamination from without, in the female via the short urethra; in the male from the frequently infected prostate, and from instrumentation of the urethra.

Bacteria which reach the bladder and prostate from below may, according to good experimental evidence, reach the kidney via the ureteral lymphatics; similarly, organisms in the right half of the colon may travel through lymphatics to the kidney. Moreover, when the normal protective mechanism of the ureterovesical valve breaks down, infected urine may regurgitate to the kidney from the bladder.

Lastly, any part of the urinary tract may be contaminated directly by trauma or by extension from an infected adjacent viscus; the infection may then reach any other part of the tract by one of the routes mentioned.

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However, despite the exposed position of the kidneys, infection rarely becomes severe unless certain predisposing factors exist. Chief among these is stasis of urine, which may arise from obstruction at any point from the external urinary meatus to the neck of the uppermost calyx of either kidney.

A second important predisposing cause is found in foreign bodies, most often stones. Less frequently, foreign bodies are introduced into the bladder by the patient during masturbation, or reach the urinary tract through wounds, usually accidental, but sometimes surgical.

Accidental trauma is an infrequent but important predisposing factor when it devitalizes tissue, introduces infection directly, or leads to stricture of the ureter or urethra.

Surgical trauma is increasingly important. It may take the form of neglect of the bladder distended by postoperative retention in the mistaken belief that the patient will ultimately be obliged to void, and infection from the catheter thus avoided. If this is allowed to continue to the point of prolonged painful distention, the resulting sustained abnormal pressure in the bladder so traumatizes it as to make it the ready victim of any organism introduced by the finally inevitable catheter, or already present in the prostate. This sequence is probably the most fruitful cause of postoperative infection of the bladder.

In recent years the trauma of urethral instrumentation from urological treatments is increasingly frequent as a cause of infection. Chemical trauma is seen rarely, usually from hexamine.

THE INVADING ORGANISMS

The type of organism depends upon its source. Those which originate in the bowel, or which ascend the urethra of the female are usually Escherichia coli or related forms. Those which come from the skin are usually staphylococci, and those from the teeth, tonsils, sinuses, prostate and cervix, streptococci or staphylococci; those which are introduced from without may be of any variety, but the most troublesome, and for the introduction of this organism the surgeon is often responsible, is the Bacillus proteus.

Ninety per cent of the infections in infancy and during pregnancy are due to coliform organisms; the percentage falls to fifty in adult males. Next in frequency are the streptococci, micrococci, and staphylococci. Any pyogenic organism may be found.

Certain organisms possess characteristics which are reflected to some extent in their clinical behavior. The cocci tend to produce cortical suppuration with abscesses either renal or perirenal; while those of the coli group usually localize in the interstitial tissue about the collecting tubules, and in the renal pelvis. Either may, however, produce the pathological picture usually regarded as typical of the other.

Bacillus proteus is important because of its tendency to split urea to make the urine ammoniacal, and to deposit phosphatic incrustations or stones, an unenviable distinction sometimes shared by some staphylococci and by the Streptococcus faecalis.

PATHOLOGY

The pathological features of infection in the kidney vary from a barely discernible engorgement of the blood vessels to a diffuse necrosis with complete infiltration by leucocytes. Local abscesses may appear and become confluent to form a renal carbuncle. The picture which corresponds to the commonest clinical form is that of "pyelitis" (actually pyelonephritis) in which one sees grossly edema and vascular engorgement in the region of the renal papilla and in the pelvis. In more severe cases, the engorgement is general; and wedge-shaped yellow streaks of suppuration extend from the papilla toward the capsule. Miliary abscesses may occur.

SYMPTOMS

The clinical picture, like the pathologic, varies widely. Here also one can usually distinguish two main forms, the cortical, usually due to cocci, and the pelvic, usually produced by the colon group.

In the cortical type there is often an antecedent history of an infection in the skin or upper respiratory tract. There is a free interval before the renal infection appears with a chill and lumbar pain. The latter may be mild or prostrating; in severe cases the picture is that of sepsis without clinical evidence of localization. There is usually tenderness at the costovertebral angle, and the kidney itself may be palpable and tender. Psoas spasm, if present, is usually due to a secondary perinephritis. The urine is usually negative, but may contain cocci on smear or culture. X-ray studies are of uncertain value in the diagnosis, since a small localized abscess or a mild diffuse process will not alter the pyelographic outline nor impair the function of the affected kidney. A large abscess may obliterate one or more calices, deform the pelvis and be mistaken for a neoplasm.

In a diffuse suppurative nephritis the pelvis may be diminished in size by swelling of the parenchyma; and excretion of the contrast agents given for excretory urography is reduced, or may be absent in the severe cases.

The treatment is that of any suppurative process, that is, rest, fluids, and local heat. The urinary antiseptics are probably quite valueless. Surgical drainage or nephrectomy may be indicated if prompt improvement does not occur, and particularly if the pulse rate remains consistently high. Nephrectomy may be a dangerous solution if, as is often the case, the other kidney is involved without giving definite signs or symptoms, and should be avoided if possible.

Far commoner and more amenable to medication is pyelitis or pyelonephritis, usually due to one of the gram-negative rods. Here also the onset is usually signaled by a chill; there is pain in the flank varying from slight discomfort to severe renal colic. The average fever reaches 101° F., but temperatures as high as 105° are not rare. In the more severe types dysuria and increased frequency of urination are usual; the urine contains pus and bacteria; and renal tenderness may be marked or lacking altogether. In the more severe forms nausea and vomiting may be troublesome.

The clinical picture is so clear-cut that special diagnostic measures are required only if the disease does not respond to the usual measures.

THERAPY

Bed rest is essential. In the acute, febrile stage there is no urinary antiseptic comparable in value to water in amounts in excess of three liters per day; if the patient is unable to drink the requisite amount, it should be given by vein. The administration of urinary antiseptics at this stage is usually valueless and contributes to the discomfort of the patient by aggravating his anorexia or gastric distress. Local heat is often gratifying for the renal pain, which may require morphine.

If the patient has any difficulty in voiding, it is important at the outset to measure the residual urine, determining at the same time whether an urethral stricture exists, since any stasis of urine will militate seriously against recovery. If residual urine is present, an inlying catheter should be used. Dilatation of any but the tightest strictures should be deferred until the patient is afebrile.

Alkalinization of the urine (fruit juices, one drachm of sodium bicarbonate four times daily) often ameliorates the dysuria, as does the tincture of belladonna in ten to fifteen minim doses four times a day. Walther recommends sandalwood oil for this purpose.

None of these measures will kill the offending organisms, but fluids help, probably by washing the urinary tract. The alkalis are soothing to the bladder, but it is impossible to raise the pH of the urine to a bactericidal level, since most of the pyogenic bacteria will flourish at a pH of 9, which ordinarily cannot be attained in the urine.

In most instances the patient will become afebrile with these measures. In a few, however, improvement will not follow, the fever remaining high, while the kidney becomes tender or even palpable. In such a situation one suspects the presence of hydronephrosis, a foreign body (usually stone) or an abscess. A plain x-ray will exclude stone with reasonable certainty, while excretory pyelography will exclude hydronephrosis.

If the latter is found, cystoscopy and ureteral catheterization are required, and a retrograde pyelogram should be made in the case of failure of visualization of the affected kidney by the excretory urogram.

If the catheter is left in the affected side for drainage the acute process will often subside in a few days. Occasionally, failure to respond to this measure will necessitate exploration of the kidney with drainage of an abscess, nephrostomy, or nephrectomy.

When the infection has reached the quiescent stage of pyuria with freedom from subjective symptoms, urinary antiseptics are indicated. Of the alarming variety offered and energetically praised by their manufacturers, only a few are of genuine value. Hexyl resorcinol (caprokol), pyridium, senerium, and mercurochrome are probably of value chiefly to the manufacturers, since they have practically no bactericidal effect in concentrations attainable in the urine. All are alleged to be soothing to the bladder.

Acidification of the urine has been known to be valuable since the work of Shohl and Janney in 1917, but only if the pH is actually brought down to, and preferably below, 5.5.

Most of the bacteria which invade the urinary tract can grow at any pH between 4.8 and 9, but their growth is inhibited below 5.5 and some strains of Escherichia coli are actually killed at 5. It is very difficult to attain a pH much below 5 clinically.

Acidification of the urine can be accomplished most readily by a diet free from fruits and vegetables, supplemented by the administration of acid salts in adequate doses. A quantitative acid ash diet is usually unnecessary. The most effective of the acid salts are ammonium nitrate and ammonium chloride. They should be enteric coated to avoid irritation of the gastric mucosa; the initial dose ought to be 30 grains (2 gms.) four times daily. Smaller doses will not affect the pH unless the urine is quite acid in the beginning.

Since the regime required to acidify the urine varies widely from patient to patient, the pH of the freshly passed urine should be determined daily. For practical purposes the addition of five drops of the U. S. P. solution of methyl red to 2 c. c. of urine is adequate since, if the mixture remains red, the urine is sufficiently acid (pH 5.0). An orange or yellow tint requires intensification of the acidifying regime. Chlorphenol red paper, which remains yellow at a pH below 5.5, and turns red at higher values, is equally satisfactory.

The urine must be fresh because its pH changes on standing.

Acidification of the urine must be used with care if the renal function is impaired, since the patient often cannot excrete the excess acid, and may develop a serious or even fatal acidosis. The appearance of any untoward symptoms demands cessation of the acid administration, measurement of the carbon dioxide combining power of the blood, and the administration of soda by mouth and of glucose intravenously.

Acidification to the proper level will cure only the mildest cases. In most, an antiseptic will be required, the two of outstanding value being hexamine (urotropin) and mandelic acid. They are most useful in infections with gram-negative bacilli; for this reason, smears and cultures of the urine should be made and used as a guide to treatment in every renal infection.

Hexamine should be started *after* the pH has been reduced to 5.5 or below, since its bactericidal effect, which is due to the formation of formaldehyde, takes place only in strongly acid urine. The minimum satisfactory dose in adults is 10 grains (0.66 gms.) four times daily, and fifteen are often necessary. The possibility of gastric and vesical irritation from hexamine should not be forgotten.

It is suggested, for economic reasons, that hexamine be tried first in all cases of subsiding acute pyelonephritis. If it does not sterilize the urine (the disappearance of pyuria is not an adequate criterion of cure) in one to three weeks, mandelic acid should be employed.

This substance was introduced by Rosenheim after a search for an organic acid which would be excreted unchanged in the urine and would, like the Beta hydroxybutyric acid formed during ketosis, be bactericidal. Clark was probably the first to make use of the bactericidal properties of ketone urine in infections of the urinary tract; he and his coworkers found that it was most effective when the pH of the urine was 5.5 or below. Fuller later found that Beta hydroxybutyric acid was the bactericidal element in ketone urine.

The ketogenic diet has a definite field of usefulness, particularly in children, but the difficulties of its administration, the necessity for perfectly exact adherence to the details of the diet and for daily examination of the urine for ketone bodies, make it almost a hospital procedure. On the other hand, the patient who takes the diet needs exercise; without it he is likely simply to store the excess fat of the diet without developing ketosis at all. Nevertheless, the method should be used in cases of infection with gram-negative bacilli which do not respond to hexamine or mandelic acid, after the presence of stasis and foreign bodies has been excluded.

Perhaps the most practicable forms of the ketogenic diet for use by ambulatory patients are those of Clark and of Nesbit, neither of which requires the use of a scale in its preparation. The former consists chiefly of cream and eggs with 5 percent vegetables. The latter is similar but supplies such a low caloric intake that a starvation ketosis develops and is aggravated by the excess of fat in the diet. Both are simple to prescribe but disagreeable as well as monotonous to take.

Since it has been shown that mandelic acid has the same bactericidal effect as has ketosis, it has to a large extent replaced the ketogenic diet. The essentials of its successful use are (1) a pH of the urine of 5.5 or below (tested daily!); (2) administration of 12 gms. of mandelic acid daily in four equal doses; (3) restriction of the fluid intake to 1,200 c.c. in twenty-four hours to secure an adequate concentration of the drug in the urine, and (4) discontinuance of its use after ten days if cure has not resulted, since organisms seem to acquire some tolerance to it in that length of time. In some instances a second course after an initial rest period will sterilize the urine.

Various preparations have been devised to minimize the gastric distress which mandelic acid produces, and to make it less unpalatable; the solutions at present available are extremely unpleasant to the taste and often produce epigastric burning; the latter is minimized if the drug is taken after meals.

The original preparation consisted of mandelic acid which was neutralized by soda before taking; it was necessary to give large quantities of acid salts with it to secure the proper pH; but most of the current preparations (Syrup Amdelate (Abbott), Elixir of Mandelic Acid (Lilly, Upsher Smith) consist of solutions of ammonium mandelate which will itself produce the proper pH in many instances.

Clinical experiments now going forward with calcium mandelate tablets, and with enteric coated tablets of ammonium mandelate with ammonium chloride may remove the objectionable taste and lessen the gastric irritation without lessening the effectiveness of the drug.

The cost of the preparations of mandelic acid is another objection to its use; and its administration to patients with impaired renal function is dangerous, both because of acidosis which may ensue and because mandelic acid itself is irritant to the normal kidney in large doses, and to the abnormal kidney in smaller doses.

Acidification of the urine supplemented by hexamine, mandelic acid or the ketogenic diet will cure a considerable proportion of uncomplicated infections due to Escherichia coli and will occasionally sterilize the urine in the presence of mild stasis, but certain organisms are notably resistant to it. Among these are staphylococci and Bacillus proteus.

Many cases due to staphylococci will respond, illogically enough, to the intravenous administration of neoarsphenamine. Cultures of staphylococci will grow in a concentration of neoarsphenamine much higher than can be attained in the bodily tissues or urine; nevertheless, many staphylococcic infections will disappear when it is used. This is thought to be due to some effect of the arsenic upon the processes of immunity. 0.15 gms. on alternate days for six doses usually suffice; if no result is obtained, increasing the dose is not usually effective. Because of the small but definite danger of untoward reaction, it should not be used unless the ordinary methods fail.

Infections with Bacillus proteus do not respond to acid therapy because the organism converts urea to ammonia so effectively that the urine cannot be acidified, although the organism is killed by mandelic acid at a pH of 5 in the test tube.

In this connection the latest addition to the family of urinary antiseptics may be quite useful. Prontylin (sulfanilamide) was introduced originally by Domagk as a chemotherapeutic agent in infections with Beta hemolytic streptococci elsewhere than in the urinary tract. Colston later reported considerable success with it in gonorrhea. More recently Cook, Herrold, and Kenny have reported excellent results with it in infections of the kidney due to Escherichia coli, to Bacillus aerogenes (which is also somewhat resistant to mandelic acid), to staphylococci, to streptococci (except Streptococcus faecalis), and to Bacillus proteus.

Sulfanilamide appears to work best in an alkaline urine. Thus, and also because its use produces some acidosis, it is best given along with sodium bicarbonate. As is the case with neoarsphenamine, organisms will grow in cultures containing a higher concentration of the substance than is attainable in the urine; yet many infections subside when it is properly administered. Here again the question of stimulation of the immune processes is raised.

Sulfanilamide has more unpleasant effects upon the patient than any of the other urinary antiseptics. Headaches and lassitude regularly appear with proper dosage; cyanosis and dyspnea (due to methemoglobinemia?) are not infrequent; and fatalities from hemolytic anemia and agranulocytosis following its use have been reported. Skin reactions have been observed and appear to result from a state of photosensitization induced by the drug. Therefore, the patient who takes it must remain under the close supervision of a careful physician throughout the treatment, and it should not be used unless ordinary and less hazardous methods fail.

The recommended dosage consists of 4 to 5 gms. daily (15 to 20 grains four times a day) with the patient under close observation. It should be discontinued in the face of the severe reactions, and the hemoglobin and leucocyte count checked frequently if any untoward symptoms appear.

A smaller initial dose is indicated in older people who are much more prone to untoward reactions. The duration of the treatment depends upon the response. 2.6 gms. per day should probably not be continued longer than a week; it may then be desirable to give 1.3 gms. daily (5 grains, four times) for another week.

Acriflavine has been recommended by Davis for infections with alkaline urine, in doses of 0.1 to 0.2 gms. My experience with it has been limited and discouraging.

Notwithstanding the very definite advance in our therapeutic armamentarium represented by the ketogenic diet, mandelic acid and sulfanilamide, by no means all infections of the urinary tract can be controlled by them. From 10 to 25 per cent will become chronic despite such therapy.

The presence of chronic pyuria in the absence of urethritis, either with or without antecedent symptoms of acute infection, raises several questions, each of which must be given serious consideration. Proper diagnosis and therapy will be greatly facilitated if a diagnostic routine is followed carefully in each case.

First, because of the greater susceptibility of certain species of organisms to certain antiseptics, the sediment of a freshly voided specimen of urine should be stained by Gram's method, and a specimen collected with sterile precautions should be cultured.

Second, renal tuberculosis should be excluded. Since this disease rarely causes symptoms until the bladder is infected, each case passes through a stage of silent pyuria. Obviously it is very advantageous to establish the diagnosis at this time. This can be done in nearly every case by staining the urine for acid-fast bacilli and by inoculating it into guinea-pigs.

Third, the presence of stones and foreign bodies, as well as of spina bifida occulta should be determined by x-ray examination of the urinary tract. This may also demonstrate the enlarged renal outline in hydronephrosis, or the fusion of the lower poles seen in horse-shoe kidney.

Fourth, the presence of stasis as a source of persistent infection must be investigated. The residual urine should first be measured. If the patient has difficult urination with residual urine, obstruction at the vesical neck is practically a certainty. Cystocele and urethral stricture must also be considered as causes of chronic partial urinary retention in the female.

If residual urine is found in the absence of subjective difficulty in urination, neurogenic dysfunction ("cord bladder") and vesical diverticulum must be considered, and a cystogram made.

If these procedures have not made the diagnosis clear, pyelography is in order. In the absence of symptoms of disease of the lower urinary tract, excretory pyelography will suffice, although ureteral catherterization is so essential in localizing the source of pyuria that this is often omitted in favor of ureteral catheterization and retrograde pyelography. Failure of the renal pelvis to visualize clearly on excretory urography is, of course, an absolute indication for retrograde pyelography.

Either type of pyelogram will, in suitable cases, reveal hydronephrosis due to such a variety of causes such as obstruction at the ureteropelvis junction, stricture of the ureter, the hydronephrosis of pregnancy, achalasia of the ureteral orifice, transparent stones, or ureterocele. Or it may demonstrate a hitherto unsuspected condition such as renal tuberculosis.

Lastly, it may demonstrate the cicatricial changes of chronic pyelonephritis which interfere with peristalsis, cause stasis, and set up a vicious circle which, while difficult or impossible to interrupt, characteristically runs a chronic and relatively benign course. In certain cases the chronic infection is predominantly cortical and leads to the destruction of parenchyma with scar tissue replacement. The end result grossly and pyelographically is much like the arteriosclerotic kidney in that the organ is shrunken but otherwise little deformed.

If there are disturbances of urination, or if the excretory urogram is insufficient, as it is in about 25 per cent, cystoscopy should be employed, and may reveal a contracture of the vesical neck, a neurogenic dysfunction (cord bladder), a transparent stone or foreign body, or an infected tumor not previously suspected.

Time permits only the bare enumeration of the therapy which will be required in these circumstances: the dilatation of strictures, removal of diverticula and stones, operative widening of the obstructed ureteropelvic juncture, excision of hopelessly damaged and tuberculous kidneys, diverticulectomy, or transurethral resection may be appropriate.

There will remain a small residuum of stubborn cases without demonstrable cause, tagged only "chronic pyelonephritis." In these attention should be given to such foci of infection as the teeth, tonsils and sinuses. The uterine cervix and the prostate are especially important in this connection. Vaccines may be tried, although without much optimism because, in most of them, the chronic infection has produced such cicatricial changes in the pelvis and ureter as to interfere with peristalsis. This leads to stasis which, in turn, prolongs and aggravates the infection.

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BLOOD CHANGES ASSOCIATED WITH DIFFERENT SPLENOMEGALIES*

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In embryonal life the spleen is a very important organ of blood formation. In post natal life the hematopoietic function of the spleen is considered to be negligible or nil. The organ, however, does retain its embryonal potentialities and, under certain pathologic conditions, may become a potent factor in blood formation.

Various functions are supposed to be performed by the spleen in normal adult life, the chief among these is the destruction of the red cells which have outlived their usefulness. The other, less important, functions of this organ are: (1) humoral-chemical control over the bone marrow concerning blood cell production (the agents involved in this control may be stimulating or retarding); (2) regulatory control of iron metabolism; (3) regulatory control of the cellular volume of the blood, made possible by its ability to store or release appreciable masses of cells, and (4) participation in maintaining the blood stream free from any foreign particulate matter.

The spleen is so intimately connected with blood-destruction, blood-regulation, and blood formation, that any appreciable long-standing disturbances in the cellular composition of the blood will often be mirrored in the structural make-up of this organ, and vice-versa. It is at times difficult to decide whether observed changes in the spleen are the cause or the effect of the changes in the circulation.

Because of its close relationship with the blood forming tissues, the spleen is subject to functional variations in size whenever cytologic disturbances of the blood occur; variations in size are more commonly of the hypertrophy-hyperplasia kind.

We will omit in this discussion the changes in the spleen brought about by different infections.

A number of primary blood disturbances are known to be associated with splenomegalies.

Splenomegalies may be classified as follows:

- I. Hyperplastic:
  - (a) Hemolytic Jaundice
  - (b) Erythremia (polycythemia).
  - (c) Sikle-cell Anemia.
  - (d) Osteo-Sclerosis.
  - (e) Anemias of childhood (Von-Jacksch's anemia, erythroblastic anemia).
- II. Metaplastic (tumor-like in nature):
  - (a) Leukemia.
  - (b) Hodgkin's disease.
- III. Abnormal Storage of Metabolic Products in the Reticulo-endothelial System:
  - (a) Gaucher's disease.
  - (b) Niemann's disease.
  - (c) Hemochromatosis and Xanthomatosis.
- IV. Idiopathic:
  - Banti's disease.

It is not the aim of this presentation to go into the details of all the enumerated blood diseases. An attempt will be made to discuss only the splenomegalies which are seen most commonly in this part of the country, and to bring out the more important points in the diagnosis of such.

I. (a) Hemolytic or Acholuric Jaundice:

The disease is seen relatively often in our community. It is commonly discovered in children or young adults. A familial or hereditary tendency exists in most of the cases; an idiopathic or acquired type, however, is recognized. An anemia of some degree is present; the anemia varying from the mild to the moderately severe: the average red counts running between 3 and 4 millions. Occasional periods of exacerbation occur, the hemoclastic crisis, and following these, the patient will have a slight febrile reaction and the anemia becomes more intensified. The jaundice may be barely noticeable, except during the period following the hemoclastic crisis, when it becomes more pronounced. Splenomegaly of some degree is always present. The leucocyte count, as a rule, is increased, averaging around 14,000 to 25,000. The important laboratory findings are:

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*Read before the Mid-West Clinical Society 1937 Fall Session.

1. Microcystosis.
2. Reticulocytosis.
3. Increased fragility of the red cells.

The microcytosis is quite noticeable and often is the first peculiarity that attracts one's attention in the examination of the blood smear.

The reticulocyte count is generally high; figures of 15-25% are very common, and may run as high as 40-50%. In general, reticulocyte counts run higher in this disease than in pernicious anemia, even with liver stimulation.

The fragility test of the red cells is of great importance here; a positive diagnosis should be withheld until it is demonstrated that the red cells will hemolyze in concentrations above .5% of NaCl. A normal control should be run at the same time.

Because we are dealing here with a hemolytic anemia, urobilin is generally found in the urine. True bile, however, is not found in the urine (hence the name "Acholuric Jaundice"), and the stools contain an overabundance of bile. On account of the more rapid destruction of the red cells, more bile and heavier bile will flow constantly through the patient's bile-passages and predispose him to gallstone formation. When gallstones are present, we may see a combination of both hemolytic and obstructive jaundice. The clinical picture then will be that of obstrictive jaundice plus the anemia and splenomegaly, and only a careful history and the proper laboratory findings will help to clarify the confusing situation.

In the differential diagnosis, pernicious anemia deserves major consideration, chiefly because it is also a hemolytic anemia. This is particularly true in the cases where the splenic enlargement is only slight. Nevertheless, the differentiation is not difficult: achlorhydria, macrocytosis, relatively-low leucocyte count with hypermature granulocytes, glossitis and parathesias, as well as the therapeutic response to liver therapy,—all these important factors in the diagnosis of P.A. are absent in this disease.

Occasonally, when the splenic enlargement is very pronounced, the disease may be erroneously diagnosed as chronic myeloid leukemia. In the last two years two such cases came under my observation. The first was that of a woman in the middle thirties who had a very large spleen, red count slightly below three million, and a leucocyte count of thirty-five thousand. She was sent into the hospital with a diagnosis of spleno-myeloid leukemia. The second case was that of a boy, aged eight. Here also the condition was erroneously diagnosed as chronic myeloid leukemia because of the splenic tumor, anemia and leucycytosis of 23 thousand. Both these cases exhibited a decided microcytosis in the blood smears, and on further study the true condition was disclosed.

As to treatment of hemolytic jaundice, splenectomy is considered by many as the only method of choice. It is my belief that one should not be too hasty in recommending this radical measure. Conservatism should be practiced for two reasons: 1st, because the disease is hardly ever fatal if left altogether alone, and 2nd, the inherent weakness of the red cells remains after the spleen had been removed. Undoubtedly, splenectomy proved to be of great benefit in a number of cases, but, on the other hand, cases are seen in which splenectomy was of no benefit to the patient. A good rule to follow would be to recommend conservative management wherever practicable and resort to splenectomy only in the more severe cases, particularly where exacerbations are frequent.

(b) Erythremia (Polycythemia):

The diagnosis of this disease does not require any complicated laboratory tests. In the early stages a blood count alone is sufficient for a correct diagnosis. The blood picture in some cases may become more complicated as the disease progresses. Clinically, also, the splenic enlargement may be very slight at first, but as time goes on the splenic tumor may reach enormous dimensions. Futhermore the hyperactivity of the bone-marrow in this disease manifests itself not only in the increased output of red cells, but of leucocytes as well. As a rule, the leucocyte counts are around 15,000 or more; counts of 25,000 are frequent. Immaturity of the leucocytes is very commonly exhibited in the increased numbers of eosinophilic and basophilic cells in the stained smears. As long, however, as the total red count is around 8-9 millions or better we are able to orient ourselves in the confusing leucocytic picture. Cases have been reported though, (and I have seen such a case very recently) where the red count begins to go down to below normal levels, while the leucocytes remain high and immature. This, in the face of a decided splenomegaly, may set one thinking in the direction of a leukemic myelosis. A good history and acquaintance with the patient's progress for months or years preceding the examination are very essential for a correct diagnosis. Mention may be made here of the fact that x-ray and radium, so commonly used therapeutically in this disease, may bring about a freakish picture of a leukemoid state.

(c) Sickle-Cell Anemia:

Of diagnostic importance in this relatively new disease are the following findings: splenomegaly, jaundice (of the hemolytic variety), anemia, weakness, and often leg ulcers. The disease is seen practically only in members of the negro race. However, cases have been reported in white patients. (The last case that come under my observation was an Italian boy). The diagnosis depends on the finding of numerous elliptical and sickle-shaped red cells. One should be aware of the fact though that the peculiar biologic property of sickling often disappears on the exposure of the blood to atmospheric oxygen. For that reason a presumptive diagnosis of this disease is made on the finding of numerous elongated, often curved, very slender sausage-shaped cells, in the presence of an anemia, splenomegaly and other clinical evidence. The definite sickling may be demonstrated on a sample of non-clotted blood which had been kept sealed off from the atmospheric air for 12-24 hours.

(d) Osteosclerosis:

This is a very rare disease, often associated with an abnormally small pituitary body, in which the medullary portion of the long bones becomes sclerosed and ossified. The bone-marrow is crowded out gradually by this process of sclerosis. The spleen takes on the function of the bone-marrow and becomes hypertrophied. An anemia of variable degree is present in this condition, and the spleen, as well as the lymph-nodes, enlarge. The enlargement of the spleen is purely a compensatory process. Splenectomy, therefore, should never be considered in such a case.

(e) Anemias of Childhood:

The hematopoietic system in the child is attuned much finer to stimulation than that of the adult. In early infancy the spleen continues to function as an accessory blood-forming organ. With increase in age this function is taken over entirely by the bone-marrow. However, when the demand for increased blood formation is great, there may be a rapid reversal to the foetal form of hematopoiesis. As a result of this change, the spleen, together with the liver and lymph-nodes, become enlarged more rapidly than in adults under the same conditions. Splenic enlargement in childhood, therefore, does not have near the significance as in the adult and does not always spell an irreversible condition. Von-Jaksch's anemia is a good example. This is a condition occuring in the first three years of life, and is characterized by splenomegaly, swelling of the lymph-glands, anemia and leucoclytosis. The disease is very often associated with rickets and gastro-intestinal disturbances. Improvement usually follows when the diet and the hygenic conditions are remedied. Von-Jaksch's anemia is not considered any more as a disease entity by many hematologists, but rather as an example of the hyperreactivity of the young child's hemopoietic system.

Erythroblastic anemia is one of the most recently discovered anemias. It was first described by Cooley in 1925. The disease is characterized by high numbers of nucleated red cells, leucocytosis, progressive anemia and splenic tumor. It occurs in the offsprings of people who originated around the Mediterranean (Italian, Greek and Syrian). I may mention here that within the last year I have seen a case of erythroblastic anemia, in a two-year-old child, in whom such an origin could not be traced. The mother of the child was of American stock of several generations, as far as she could determine, while the father came from Germany.

This disease is usually recognized in early infancy and it may extend throughout childhood. It usually terminates fatally. Many cases of erythroblastic anemia have been in the past confused with Von-Jaksch's anemia. With our present day knowledge the difficulty in differentiation is facilitated.

II. Metaplastic Splenomegalies.

(a) Leukemia:

The spleen is usually involved in all forms of leukemia, but the involvement of this organ in the acute leukemias is not great. In chronic lymphatic leukemias the splenic involvement is variable, rarely though very pronounced. The splenic enlargement attains its maximal size in chronic myeloid leukemia. The size of the spleen here often exceeds that of the liver. In the average untreated case the blood findings are definite and conclusive. Following radiation, however, (which is commonly used in this disease therapeutically) the leucocyte count may come down to around normal levels and the splenic tumor may disappear. If the patient should happen to change physicians at such a period, the examiner may have doubts about the correctness of the previous diagnosis. As a rule, however, the relative percentage of the eosinophilic and, more so, basophilic cells in the blood smears will be quite raised. This, together with the patient's story of having received radiation over the spleen, should lessen one's haste of being over critical.

(b) Hodgkin's disease is characterized by diffuse hyperplasia of the lymphoid tissue throughout the body and enlargement of groups of lymph-nodes. The hyperplasia is of a peculiar type and has an individuality of its own. The splenic involvement is generally not pronounced.

A splenomegalic form of Hodgkin's is recognized, however. One may be misled in such a case by the combination of the splenic tumor and the glandular involvement. The absence of any characteristic blood changes, plus a biopsy of an accessible lymph-gland should establish the correct diagnosis.

III. Splenomegalies due to abnormal storage of metabolic products in the reticulo-endothelial system:

The spleen, as well as the liver and lymph-glands, contains an abundance of reticulo-endothelial cells in its normal make-up. The function of these cells is to ingest foreign material and to clear the blood stream of any particulate matter foreign to it. The ingested material is generally metabolized by these cells.

In rare conditions these cells may become blocked with foreign material and unable to digest it. Theoretically such a condition may be the result of either an inherent defect in these cells, or an overabundance of foreign material in the blood stream; in the latter instance the cells cannot catch up with the oversupply. Experimentally, such a condition may be brought about by injection of various colloidal particles; dyestuffs are commonly used for such experiments.

Gaucher's disease, Niemann's disease, as well as hemochromatosis and xanthomatosis are considered now as diseases in which the reticulo-endothelial system is blocked by foreign matter, mostly lipoids in character. The material causing the blocking of the cells is different in each of these diseases. In Gaucher's disease the foreign material is the not-well understood "Gaucher's substance," protein-like in nature. In Niemann's disease the foreign material is of a lipoid nature. In hemochromatosis and xanthromatosis the substance is also a lipoid. Gaucher's disease and Niemann's disease are always accompanied by decided splenomegaly while in hemochromatosis and xanthomatosis the splenic enlargement is of a milder degree.

IV. Idiopathic splenomegalies.

Banti's disease:

There is a good deal of controversy regarding this syndrome. On the one hand there is a tendency to consider as Banti's disease any case of anemia with splenomegaly of obscure etiology. "Splenic anemia" and Banti's are used synonymously by some authors. Others are opposed to this view and reserve the name of Banti's only for the cases where anemia, splenomegaly and cirrhosis of the liver are present. This would mean that one could never be certain about the diagnosis during the first stage of the disease. It often takes years before the liver involvement manifests itself. This controversy is of more than theoretical importance from the standpoint of treatment. Splenectomy usually gives good results, provided it is done during the first stage, before irreversible changes have been produced in the liver. The policy of "watchful waiting," until the diagnosis is confirmed by the apparent liver involvement, means throwing away your best and only chance of radical attack of the problem.

One should, therefore, be very much on his guard in handling a case of "splenic anemia" and go into the minutest details of differential diagnosis, excluding one by one, the splenomegalies associated with infection and those of a primary nature. If, after an exhaustive study, the case does not fit in with any of the mentioned splenomegalies, the diagnosis of Banti's is justified, and splenectomy should be advised.

In conclusion, I wish to state that most of the enumerated diseases are not near as rare as some of us want to believe. One does not necessarily need to perform the most complicated laboratory tests to establish a correct diagnosis. One should, however, be familiar with the entire group of these diseases for the proper orientation.

CORONARY THROMBOSIS VS. DISSECTING ANEURYSM IN DIFFERENTIAL DIAGNOSIS

L. Minor Blackford and Carter Smitth, Atlanta, Ga. (*Journal A. M. M.*, July 24, 1937), report a case of dissecting aneurysm of the aorta that occurred in a highstrung, hypertensive, fat man, aged 61; the diagnosis was definitely made before necropsy. Death occurred from rupture of the dissecting aneurysm into the pericardium thirty-six hours after the original break through the intima. The long history of hypertension, the agonizing, tearing pain as though something had been "torn loose inside," the temporary loss of vision, the nausea, the vomiting, the shock, the murmurs at the arotic region and the absence of pulsation in one extremity, the period of relative comfort with the dramatic death on slight effort, and the rupture into the pericardium in this case were all typical of dissecting aneurysm of the aorta, as McGeachy and Paullin have recently pointed out. The diagnosis of dissecting aneurysm of the aorta should be made without difficulty, if it is taken into consideration in differential diagnosis. In spite of the rarity of the condition, therefore, it is exceedingly important to make the diagnosis to prevent too much being done and to keep the patient as comfortable and quiet as possible in the hope that he will recover with a double-barreled aorta.

TUMORS OF THE NECK: THEIR DIAGNOSIS AND TREATMENT

Part I: Inflammatory Swellings of the Neck

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Acute lymphadenitis, cellulitis, and abscesses constitute the most common varieties of cervical tumors. These inflammatory reactions are usually secondary to pyogenic lesions of the mouth, naso-pharynx, face and scalp. The offending organisms invade the regional lymph nodes which drain the initial focus. The submental and submaxillary group drain the mouth, nose, pharynx, lips, tongue and face, while the scalp, external ear and skin over the neck are drained by the superficial glands lying along the external jugular veins. Likewise, the lymphatics of the tonsils, pharynx, larynx, trachea and esophagus form a plexus of glands along the internal jugular veins and are known as the deep lymphatics. An appreciation of these anatomical facts aids in locating the provocative lesion.

The recognition of acute cervical adenitis presents no difficulties and hence requires no discussion. Its proper management, however, constitutes a definite problem. The main therapeutic offensive should not be aimed at the inflamed lymph node but rather against the primary source of infection. If constant re-infection can be prevented, the inflammatory reaction within the gland will rapidly subside. This is particularly true if the lymphadenopathy is secondary to tonsilitis, pharyngitis, scarlet fever, measles or an upper respiratory infection. Recently we have seen seven cases of acute nasopharyngitis associated with measles and in each instance the cervical glands were swollen, painful and tender. That these children were extremely ill was evidenced by a hyperthermia of 105° F. and a severe toxemia. Conservative therapy consisting of hyperalimentation, forced fluids, application of ice packs to the neck and the use of analgesics proved efficacious, for in all but one instance the acute adenitis subsided spontaneously.

Over-enthusiastic, ill-timed, or injudicious treatment of the provocative focus may result disastrously. For example, the hasty extraction of an 'ulcerated tooth' may precipitate an osteomyelitis, a diffuse cellulitis, suppurative adenitis, mediastinitis or even a septicemia. Wisdom dictates that it is better to treat such cases conservatively. First, drain the periapical abscess and permit the acute inflammation to subside; then the offending tooth can be removed with impunity and the adenopathy will disappear. Not infrequently, conservative management of facial-labial furuncles, carbuncles or even a stomatitis will facilitate localization of the infectious process so that radical treatment may be reduced to a minimum.

The therapeutic errors in the local management of suppurative adenitis are not those of omission but rather those of commission. The most flagrant mistake is to incise and drain the swollen glands before the efficacy of conservative therapy has been determined. It usually requires from 48 to 72 hours after eradication of the initial infective focus before the enlarged glands begin to decrease in size. During this period either ice packs or hot fomentations should be applied to the inflamed tissues. Heat is usually more effective than cold. Even though the inflammatory reaction progresses to the stage of abscess formation, active drainage should be deferred for another 24 hours after making the diagnosis of suppuration. This permits the necrotic tissues to become liquefied and gives the body ample time to localize the infection.

Inadequate drainage constitutes the second therapeutic error. Incision of a cervical abscess is not a simple procedure because of the intimate association of the abscess with the large blood vessels and nerves of the neck. Absolute control of the patient is essential; therefore, a general anesthetic should be employed. Evipal (Winthrop) administered intravenously has proved very satisfactory. After incising the skin, a blunt forcep is cautiously introduced into the inflammatory mass. If pus is encountered the opening is gently dilated by slowly separating the blades of the forceps. An exploring finger carefully examines the inside of the pyogenic cavity, and opens up all loculated pockets of pus by breaking their confining septa. This examination outlines the limits of the abscess and permits the drains to be placed in its most dependent portion. If necessary, counter drainage should be employed. Failure to do this invariably results in residual abscesses, suppurative sinuses and extension of the infective process. The incision should be so planned as to give adequate drainage, and less attention should be paid to its cosmetic appearance. As soon as the abscess has been opened a gentle irrigation will flush out much of the necrotic debris and thus facilitate healing. If the cavity is very large it should be firmly packed with iodoform gauze for at least 24 hours, after which the packing can be replaced by a rubber tissue drain. Hot magnesium sulphate fomentations, dry heat, and antiseptic irrigations are effective in stimulating the reparative process.

If the abscess is situated beneath the deep cervical fascia it may be difficult to determine the optimum time to intervene. The brawny induration of the overlying tissues may obscure any sense of fluctuation, but soft tissue roentgenograms are usually informative. The resisting muscles as a rule force the infection to follow the regional fascial planes rather than point towards the surface. In some instances the infection may extend into the upper mediastinum but this does not occur as frequently as anatomists would have us believe. Sometimes an aspirating needle can be inserted into the inflammatory mass and if pus is found open drainage can be instituted. Any sign of respiratory embarrassment calls for energetic treatment and invariably signifies a diffuse, rapidly spreading cellulitis. Adequate drainage combined with a tracheotomy is usually effective.

Ludwig's angina is an acute spreading infection of the floor of the mouth, the submaxillary regions and the upper part of the neck. The streptococci gain entrance to the tissues from an abrasion or ulceration of the oral mucous membrane or from a carious or abscessed tooth which has been extracted. The fulminating cellulitis spreads rapidly along the floor of the mouth, around the posterior border of the mylohyoid and extends into the suprahyoid cervical tissues. The onset is sudden and the course rapid. Dysphagia, difficulty in breathing, and severe toxemia are the outstanding symptoms. The floor of the mouth is pushed upward, and both sides of the neck are tense, swollen and tender, but not fluctuant. At times the swelling is so pronounced that the mouth cannot be closed. Gangrene frequently complicates the picture and asphyxiation due to edema of the glottis and uvula may produce death.

Prompt energetic drainage of the submental tissues is imperative. Nature will brook no delay! Inhalation anesthesias are contraindicated as they accentuate the respiratory difficulties and the masks prevent free access to the diseased areas. Evipal is the ideal anesthetic agent for such operations as it provides complete muscular relaxation and also exerts a comforting analgesic influence for several hours after the operation. In order to drain the floor of the mouth effectively, a midline incision is made in the submental region and carried through into the oral cavity. This can be done rather quickly for there are no important structures in this region. In advanced infections similar incisions are made in each submaxillary area and forceps are gently forced into the supramylohyoid tissues. In the event of a bilateral infection through and through drainage can be established without entering the oral cavity. Hot fomentations, irrigations with antiseptic solutions and adequate drainage will often contral the disease. Occasionally a tracheotomy may be necessary. Early treatment actively pursued usually results in a favorable prognosis.

(Bibliography in reprints).

PROTAMINE INSULIN IN THE TREATMENT OF DIABETES MELLITUS*

WITH REPORT OF FATAL CASE OF HYPOGLYCEMIA

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INTRODUCTORY

Epochal as the discovery of insulin has proven to be, its application in the treatment of diabetes has met with many difficulties. In the main, it has failed to emulate conditions obtained under normal physiology, as under such conditions the supply of insulin is practically continuous and is automatically regulated in amount in accordance with the needs of the individual. The nearest approach to this condition was produced by multiple small injections, and even required waking of some patients during the night for administration of additional doses. Naturally, this was unsatisfactory, and moreover, it failed to give complete control. Many patients vacillated between hyperglycemia and hypoglycemia, all within a period of the same twenty-four hours. In most of our severe cases we failed to bring the fasting blood sugar anywhere near normal values.

Such difficulties prompted the seeking of an insulin which would act more slowly and the effects of which would be more prolonged. In June 1935, Hagedorn and his associates of Copenhagen(1) reported such a product in a combination of insulin with a protamine obtained from the sperm of certain salmon. The protamine retards the rate of absorption of the insulin, and this tends to produce a depot of insulin in the subcutaneous tissues which is released slowly and continuously. Under such conditions few administrations of large doses of insulin becomes possible. This product met at once with great enthusiasm, and with but one exception(6) in my knowledge, many clinicians(2)(3)(4)(5) here and abroad lauded the new discovery almost, we might say, in extravagant terms. That such optimism was not fully justified one could read between the lines of these writings. It appears that the early protamine lacked stability; there was evidence of varying rates of action in different patients and in the same patient at different times. Later, due to the work of Canadian investigators(7)(8), the metals of calcium and zinc were added to the combination of protamine and insulin and produced a much more stable and satisfactory product. Soon calcium was abandoned, and at the present time the combination used is protamine zinc insulin. In February, 1937, this product became commercially available, bearing an expiration date on the package, and selling at a price but little in excess of that of regular insulin.

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DESCRIPTION

Protamine zinc insulin is a suspension in liquid which settles as a white, flaky precipitate. The insulin is combined with the protamine and zinc in this precipitate. At the present time it is marketed in U 40 strength, but because of the use of large doses which often require more than one c.c. at a time, manufacturers are at present experimenting with a U 80 strength(18). Its physiological action is slow and prolonged; compared to regular insulin which begins its action a few minutes after its administration, reaches its maximum effectiveness in about four hours and is completely utilized in eight hours, the action of protamine insulin is hardly perceptible in the first three or four hours, and its results are prolonged for twenty-four hours or more with its maximum effect somewhere around the eighteenth hour.

ADVANTAGES

The most important advantage that protamine has over regular or unmodified insulin is the better control of diabetes which we are able to obtain with its use. It furnishes a means of keeping diabetes under control twenty-four hours of the day. Almost invariably the fasting morning blood sugars are at a normal or below normal value. It is hoped that this better control of diabetes will result in a reduction of its complications.

A second advantage lies in the convenience of its use inasmuch as it minimizes the number of injections necessary. Patients certainly appreciate the fact that they can take their insulin once a day and forget about it the rest of the time.

Another benefit lies in the subjective improvement of the patient; few are the authors who have failed to mention this effect upon their patients. In our experience, patients have resisted the discontinuance of protamine insulin even though they had suffered severe reactions, stating that they felt better with its use than with the use of regular insulin. In two cases, male patients voluntarily reported that they experienced stimulation of sexual potency with the use of protamine insulin.

Some authorities hold that the use of the protamine mixture allows an eventual saving in the total amount of insulin required. This would certainly be an advantage were it not disputable. As a matter of fact, many cases require more insulin now than heretofore, although their condition is much better controlled. Some authorities have also pointed out that the diet need not be quite so rigid. However, we feel it unwise to emphasize this point as laxness in diet should at all times be discouraged.

DISADVANTAGES

There are several disadvantages in the use of protamine insulin which are not sufficiently dealt with in the literature on the subject. In the first place, it is far less flexible than unmodified insulin. In action it is slowly cumulative because of its overlapping effects. The stabilization on this kind of insulin is necessarily slow because of this effect and must proceed over a rather long period. Furthermore, adjustments of dosage or time of administration cannot be made as rapidly as with ordinary insulin.

Another disadvantage lies in the difficulty of its control. Changes in the condition of the patient such as are brought about by overexercise or by lack of food intake or of food utilization makes for overdosage and often leads to hypoglycemic reactions. A further disadvantage of protamine insulin is its comparative uselessness in emergencies where rapid action is required.

Still another disadvantage lies in the type of hypoglycemic reactions, a condition which has been minimized by most authors. It has been stated that reactions are rare and tend to be very mild. Rabinowitch(5) has even stated that he meets no reactions at all with the sole use of protamine insulin regardless of the size of the dose. This minimization is to be deplored. We regret that this has not been our experience. We have had many severe reactions, many even to the point of convulsions, and we have had one fatality directly attributable to an overdose of protamine insulin.

CASE REPORT

G. H., age 13, male, University Hospital No. 56833. First admitted in June, 1931, with diagnosis of diabetes. Re-admitted in April, 1932, with acidosis. Dismissed on diet C 50, P 58, F 146, no insulin.

Entered diabetic clinic in May, 1933. Diet C 40, P 40, F 80, insulin, none. In December, 1933, because of glycosuria and hyperglycemia, he was started on 10 units of insulin (5-0-5). From that time insulin gradually increased until in May, 1936, patient was receiving 28 units of insulin daily in four doses; 4 units at 4 a. m., 10 before breakfast, 8 before lunch and 6 before evening meal. Was well controlled under that regime. During May to July, 1936, attempts were made to put him on protamine insulin either alone or in combination with unmodified insulin. Various combinations and diet distributions proved unsuccessful, resulting in more glycosuria, variable fasting blood sugars, and loss of weight. He was returned to four doses of regular insulin with good control.

On August 1, 1936, patient entered University Hospital for stabilization on protamine insulin. At this time the calcium preparation was used. Dismissed with Diet C 120, P 60, F 100, protamine calcium insulin 28 units daily, in two doses, 18 at 6 a. m. and 10 at 2 p. m. Later was changed to protamine zinc insulin.

In November, 1936, an attempt was made to put him on single dose of protamine zinc insulin. This proved unsuccessful from the standpoint of increased glycosuria, although the morning blood sugar was low to the point of hypoglycemic reactions. He was finally established on a combination of 25 units P.Z.I., and 5 units unmodified insulin, both taken at the same time, before breakfast. This seemed to work very nicely; his condition was excellent and he was gaining weight.

Late in December, 1936, he had an attack of acute follicular tonsillitis with a rather high febrile course. This lasted several days and resulted in a complete upset of his balance. Following that, during January to April, 1937, we experienced great difficulty in attempts at reestablishment. His condition became very variable. He had a constant tendency to vomit, his pulse rate increased, he complained of weakness, and his skin had developed a brownish pigmentation.

On April 18, 1937, the patient appeared drowsy and refused his food. Failing to heed this warning, the mother administered insulin on the morning of April 19. That night he had convulsive reactions. On April 20, he was vomiting all food. All insulin was stopped and he was given forced feedings of sugar solution, which he retained partially. On April 21, he developed acetonuria and acetone breath. He was still vomiting. We resorted to frequent feedings of sugar solution and administration of regular insulin in 5 unit doses. On the evening of April 22, he lapsed into unconsciousness with delirium. He was admitted to University Hospital in a condition of dehydration and acidosis. Glucose was administered intravenously with immediate restoration of consciousness.

April 24 to May 1, great difficulty was encountered in an attempt to restabilize him. Blood sugars varied from 308 to hypoglycemic levels. He retained little food and glucose had to be administered by proctoclysis and intravenously. The last two or three days of this period he showed sufficient improvement so that he was put back on protamine zinc insulin, 25 units daily in single doses. May 1, his morning blood sugar was 200. On the evening of May 2, following a very good day, he had a reaction at 7:30 p. m., but responded to 600 c.c. of 5% glucose intravenously. On the morning of May 3, he was in profound shock, with blood sugar of 56. Unfortunately, the intern had failed to countermand the insulin order for that morning. Unable to get into his veins, glucose was administered by proctoclysis, and with the use of the Wangensteen tube and adrenalin we were able to obtain a slow and steady response, so that by 3 p. m., he was well out of shock. Following that he failed to retain the proctoclysis and this had to be discontinued. At 5:30 p. m., he again went into profound shock and attempts to cut down upon and to get into the collapsed veins failed. He died at 7 p. m.

AUTOPSY REPORT

Gross findings—No gross changes sufficient to cause death. Chronic tubercle of lung.

Microscopic findings—Acute interstitial pneumonia. Acute necrosis of adrenals. Diminished number of Islands of Langerhans. Degeneration of spinal ganglion cells.

COMMENT

While the complicating general condition here was undoubtedly that of adrenal insufficiency as evidenced by the development of brownish pigmentation of the skin, the general hyposthenia, and of course, the final findings of adrenal necrosis, we are forced to admit that the direct and immediate cause of death was hypoglycemia. We believe that the changes in the spinal cord are attributable to the hypoglycemic reaction. We feel that with better knowledge of the insulin compound, or with the use of unmodified insulin, this result might not have occurred.

SYMPTOMS OF HYPOGLYCEMIA

It is well at this point to consider the symptoms of hypoglycemic reactions developed in the use of protamine insulin. The chief differences between this type of reaction and that caused by regular insulin lie in its insidious onset, its prolonged duration, and in the absence of the usual symptoms of tremors, sweating and tachycardia. This last group of symptoms, supposedly a result of adrenal stimulation, are lacking ostensibly because of the adjustment of the adrenals to the gradual lowering of the blood sugar. The patient first becomes conscious of a vague feeling of fatigue which is followed by increasing weakness and slight numbness about the mouth and the ends of the extremities. This progresses to drowsiness and mental dullness, slowly reaching the point where one is unable to help oneself and later even to actual negativism, a state in which the patient resists every attempt of others to help him. There is nausea, progressing to vomiting, a condition highly confusing because of its resemblance to hyperglycemia and acidosis. Muscular twitching and convulsions often develop, these convulsions becoming epileptiform in character, with frothing at the mouth, stertorous breathing, and biting of the tongue. Failure of recognition of the reaction in its early stages is a notably perplexing feature, and this difficulty is increased when the reaction has its onset in the sleeping hours of the patient; it often happens that relatives are awakened by unnatural noises to find the patient in a convulsive state. Following the acute phase there is a troublesome persistence of symptoms and after-effects due to the difficulty of eradicating the store of insulin present in the tissues; amnesia, headache, tremors, dulling of sensation of taste, and exaggerated reflexes may last for several hours after the attack, and sometimes persist even to the next day or two in a minor degree.

METHOD OF ADMINISTRATION

1. Type of case suitable:

Protamine insulin finds its ideal use in the mild and moderately severe cases of diabetes. This is rather disappointing because it was our difficulties with the severe cases that necessitated its invention. However, as Joslin points out,(9) that out of a possible 500,000 diabetics in the United States, 300,000 are mild, 175,000 are moderately severe, and only 5,000 are severe. This being the case, protamine insulin finds its best use in the vast majority of diabetics. Morever, Joslin points out that with this type of insulin and a single administration, we are able to get more patients to use insulin: "There are probably 70,000 more diabetic patients in this country using insulin today than there were a year ago, and I attribute this increase chiefly to the discovery of protamine insulin."(18) Joslin says further, " . . . . persons with mild diabetes . . . . ought to be prevailed on to take insulin in the early stages of the disease. In this way alone can most of them be prevented later from acquiring moderately severe or even severe diabetes."(18)

Protamine insulin may also be used in severe cases. This is, however, attended with a certain degree of difficulty, usually requiring supplementary doses of regular insulin before meals. The chief advantage of its use in this type of case lies in the avoidance of the mid-night administration and the disturbance of the patient incidental thereto. In emergencies, though not as useful, it may be administered as a supplement to regular insulin. In diabetic coma it is least useful; theoretically, regular insulin should be used for rapid action and protamine administered at the same time for the more gradual stabilization. This method of use is still in the experimental stage.

2. Dosage:

In starting protamine insulin we have the least difficulty with those patients who have never used insulin before. In these cases we merely decide upon how much insulin they need and administer this amount in a single dose, preferably in the morning. However, changing a patient from unmodified insulin to protamine insulin presents greater difficulties as there is a preliminary period of upset with considerable glycosuria. In either case, the clearing of sugar from the urine is a slow process, but in a patient who had been previously cleared by the use of ordinary insulin, it may cause misgivings if this condition of treatment is not fully understood.

Several methods have been devised for the change from regular insulin to protamine. Some(12)(16) have started by giving a small dose of protamine insulin the night before, and a full dose the next morning and every morning thereafter. In our experience we have had good results by starting with a dose of protamine insulin equal to ⅔ of the total insulin requirement, plus the usual morning dose of regular insulin, both given simultaneously in the morning before breakfast. Three days later, in most cases, the regular insulin is decreased by one-half and the protamine is increased by a like amount. After three more days the regular insulin is discontinued, and the protamine is given in full dosage.

In making modifications of dose or time of administration, no changes should be made more often than at three day intervals. The requirements for such modification can be best gauged by examining four urine specimens daily. We number our specimens from 1 to 4; specimen No. 1 consists of the urine voided from before breakfast to before lunch; specimen No. 2 from before lunch to before the evening meal; specimen No. 3 from before the evening meal to bedtime, and specimen No. 4 from bedtime to before breakfast the next morning. Thus we have a check on every meal and on the over night reaction. If specimens No. 1 or 2 contain sugar, we feel that the insulin given either acts too slowly or is insufficient to take care of the glucose ingested at meals, and accordingly we add regular rapid-acting insulin. If the No. 3, and particularly No. 4 specimens show sugar, we feel that this is altogether due to the insufficient quantity of protamine or slow acting insulin, and increase this accordingly. If all specimens are negative we reason that the patient is receiving either enough insulin or too much insulin. We do not wait for reactions to determine the latter situation. If all specimens are negative after three days' testing, we have the patient decrease the dose of insulin by two to five units. If, after three days' testing, sugar persists in some of the specimens, we increase accordingly by two or three units. We teach our patients to test their own urine and have them report to us at once any change in their findings. These checks on the urine should be done frequently and constantly to avoid unforeseen accumulations of insulin or changes in tolerance of the patient. In severe cases we often find it impossible to avoid some glycosuria, and in these cases we feel that a certain degree of glycosuria is to be preferred to reactions. In our experience, patients taking protamine insulin have less tendency to acidosis even if they persist in exhibiting some glycosuria and we have subjectively much better patients than when they are having repeated even if mild reactions.

As to the time of administration,—whether it is given before or after meals is unimportant as the reaction is slow. We find a morning administration to be applicable in most cases. However, some cases show a more rapid rate of action as determined by the urinary findings and reactions. Such cases may develop their reactions sometimes during their sleeping hours,—a dangerous period for such occurrences, as already pointed out. In such conditions the protamine insulin may be administered later in the day. We give it at 10:00 a. m., at noon, at 2:00 p. m., 4:00 p. m., or even at 6:00 p. m., depending upon the individual needs of the patient. It is worthy of note that as is the case with regular insulin, the dosage and timing of protamine insulin also requires a high degree of individualization.

3. Technique of Administration.

There are certain precautions that must be observed in the handling of protamine insulin. The product should be stored in a cool place and should not be used beyond the expiration date. Before using, the bottle should be rotated thoroughly to get the contents into even suspension, but gently as we are dealing with a protein substance and may cause frothing which might disturb the evenness of the suspension. The syringe and needle should be sterilized by boiling as alcohol may precipitate insulin out of its combination with protamine, and you may obtain the effect of rapid acting insulin when the other type is desired. When protamine insulin and regular insulin are given at the same time, these must be given at different sites to avoid combination of the regular with the excess of protamine present and producing the effects of slow acting insulin where rapid acting is desired. When using the same syringe, give the regular insulin first as any excess of the protamine remaining in the syringe may combine with the regular insulin if the protamine is given first and thus retard the action.

DIET DISTRIBUTION

Because of the slow action of protamine insulin, and because of its lack of flexibility, we have had to develop a new technique in the use of diets. This lack of flexibility in the insulin has made it necessary for us to provide a compensating flexibility in the diet for the best control of the situation. In the first place, it is most advisable to reduce the fasting interval by earlier breakfasts and later evening meals. Again it is best to distribute the carbohydrate content in such a way that the diet at meals closest to the time of insulin administration receives the least. It is also a good idea to give about 10% of the carbohydrate at bedtime to avoid the accumulation of insulin effect during the night. This is best done by the use of a slowly absorbing carbohydrate such as bread or crackers. In most cases our diet distribution with relation to the carbohydrate content is as follows: (insulin administration before breakfast) Breakfast 20%, lunch 30%, evening meal 40%, bedtime 10%. Some clinicians even use small lunches between meals, deducting these amounts from the regular meals.

TREATMENT OF REACTIONS

Our experience with reactions has been such that we greatly fear their occurrence. Fortunately for us, since the development of the technique outlined above, we have had a great diminution in the frequency and severity of reactions. We feel strongly that reactions are best treated by avoidance, and this, as already pointed out, can best be done by repeated checks of the urine and diminution of the insulin dose when the urine remains constantly negative. When the reactions develop, treatment must be started early, as great difficulty may be had with the patient later in getting him to take or retain the food. Because the reaction is apt to be prolonged, treatment must not be stopped with the first administration of carbohydrate, but must be repeated at frequent intervals. It is well to give a rapidly absorbing carbohydrate at first,—for example, orange juice or a solution of sugar and water,—this to be followed by a slower absorbing carbohydrate at once and at proper intervals following: a slice of bread or some saltine crackers given every hour or so until the patient is completely cleared. The insulin dose should be appreciably decreased, or even discontinued for a day or two following the reactions, as seemingly the accumulation of insulin already present may precipitate another reaction. Patients should be cautioned about the effects of overexercise, as with the taking of protamine this is much more likely to precipitate a reaction than with the use of ordinary insulin. It is well to advise these patients to increase their meals in case of overwork or overexercise. One of our patients has learned to take a dish of ice cream whenever he is subjected to overwork.

CONCLUSIONS

Protamine insulin is not a perfect substitute for pancreatic insulin; it does not supply a means for the automatic regulation of the patient's insulin requirements. With its use we are not as yet duplicating the normal physiological mechanism of insulin production. However, a great advance has been made in the development of the principle of a slow acting insulin and protamine insulin has become a valuable addition to our armamentarium in our fight on diabetes. While many things are still to be learned about its use, sufficient knowledge has already been attained to make it practicable for use by the average practitioner. And that is as it should be, for with the great prevalence of diabetes in this country, every doctor should have knowledge of and be able to use all methods available for its treatment.

I am greatly indebted to Eli Lilly and Company for the supplies of protamine insulin combinations which they have so generously furnished me during the experimental year.

(Bibliography in Reprints).

THE MANAGEMENT OF DEEP NECK INFECTIONS*

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The management of deep neck infections will often tax the ingenuity of the surgeon. This type of infection calls for his best judgment, for almost immediate decision, and at times plenty of courage. Without exception these patients are very sick, but I believe that much suffering can be ameliorated, many complications eliminated, and many a disastrous outcome averted by early adequate drainage and good supportive treatment.

These infections may enter the throat from some infection in the oral cavity, the tonsils, adenoids, sinus or nose. They may follow the trauma of surgery or may arise subsequent to some infection such as tonsilitis or mastoiditis. Mosher and Beck(2) find the largest percentage arising from the tonsillar region. In our office we have the larger percentage arising from the oral cavity.

If we know the etiology of these infections, we can fairly well anticipate their course and better outline the treatment. That is, if we know the cause of the infection, we will know the part of the neck which will probably be involved first, and the course the infection will probably follow. It also helps in determining the type of infection that is present. I believe that it has been proved that if the infection arises from the oral cavity the spirochaeta vincenti will dominate. Walsh(3) reports that where an infection is the result of a human bite, this organism is always present. Beck(2) in a study of twenty-four cases found the streptococcus hemolyticus to be the dominating organism in fifty per cent. The larger percentage of these cases arose in the tonsillar region. Chatterji and De(4) made a study of a number of cases in India and reported the staphylococcus aureus to be the predominating organism in facial cellulitis. They reported mortality rate of eighty per cent in these cases. In a study of a number of Ludwig's Angina, Fabrikant(5) found the Bacillus perfringens to be the important organism causing the infection.

The individual with lowered resistance is more often a victim of these infections. Checking through our histories, we find one case of pregnancy, one with long standing nephritis, two with latent syphilis, three were diabetic, and many having some type of anemia. This is not always true, as we see neck infections in the robust. We can say that trauma, a virulent organism, and lowered resistance all play important parts in the etiology of neck infections; yet they may appear without the trauma or the lowered resistance, the organism alone being responsible.

When the neck becomes involved with deep infection, the patient usually becomes very toxic. Chills, sweats, high temperature, and rapid pulse may be present. There may be considerable external swelling, but if the pus is located in a deep fossa, the swelling may be hardly noticeable, the patient's chief complaint being a painful throat. There will be an enlargement of the neighboring lymph glands. If the infection is advanced, respiration may be embarrassed. At times it may be difficult to distinguish between a cellulitis and erysipelas. Milian's ear sign may be helpful in this connection.

> "Milian's Ear Sign—As facial erysipelas spreads, it involves the ear. On the other hand, all subcutaneous inflammations stop short of the pinna because of the close adhesion of the skin to the cartilage."

We hospitalize all patients with neck infection without exception, including cases where symptoms are not severe. Immediately upon entering the hospital, neo-arsphenamine 0.4 gm. is administered. Alden(6) suggests the use of this drug in cases of neck infection that are secondary to dental disease. We are now administering it in all cases of infection of the neck and surrounding tissues. Our results corroborate entirely those found by Alden, in cases where the portal of entrance was the oral cavity. At times the result seems almost miraculous. There has been a number of these cases that I am certain were saved from external drainage because of the use of this drug. If the streptococcus or staphylococcus is the predominating organism, we will not obtain as satisfactory result from the neo-arsphenamine. If toxic symptoms continue, incision and drainage is indicated. We should not wait for fluctuations as the infection may travel a disastrous course before reaching this stage.

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*Presented before the annual meeting, Nebraska State Medical Association, Omaha, May 11-13, 1937.

In order to establish adequate drainage in neck infections, a familiarity with the applied anatomy of the neck is indispensable. I cannot go into the anatomy of the neck, but attention should be called to the various compartments where pus may accumulate and the course that it is prone to follow. The most important of these compartments are the submental, submaxillary, parotid, and pharyngomaxillary. The submaxillary and the parotid contain the respective glands. The retromandibular process of the parotid gland is devoid of fascia at its inner extremity where it lies in the most intimate relationship with the pharyngomaxillary space. The submaxillary gland has a direct connection with the oral cavity through its duct. The pharyngomaxillary space is cone shaped, its apex extending downward into the sheath of the great vessels, and its base at the base of the skull. There exists an intimate relationship between these compartments and the vessel sheath.

The prevertebral fascia is frequently involved with infection. This fascia encircles the vertebral column and the muscles attached to it. High up in the neck the scaleni muscles have their origin and lie in contact with the vertebral column. These muscles form a pyramidal space with its apex at the base of the skull, the vertebral column and the longus colli muscles forming the posterior side, and the scaleni muscles the lateral side.

Another important layer of the fascia should be mentioned from the standpoint of applied anatomy. In the lower part of the neck it is known as the pretracheal layer and surrounds the trachea and the esophagus. It splits anteriorly to envelope the thyroid gland. In the upper part of the neck it is known as the buccopharyngeal fascia. If the infection arises from the hypopharyns and esophagus, this fascia will be involved.

Various manifestations which appear will aid in diagnosing the region of the neck involved. If the infection is located in the submental or submaxillary region there will be considerable external swelling, which may extend into the floor of the mouth. Trismus may be extreme. The typical Ludwig's angina first appears in this region. These cases are recognized by the board like swelling, the marked edema of the floor of the mouth, and the grayish black appearance of the tissues when incised. If this infection is not checked by adequate drainage, it may spread rapidly downward into the larynx involving the glottis and cause suffocation.

Infections arising from the tonsillar region usually involved the pharyngomaxillary space. If block anesthesia for the extraction of posterior teeth is not carried out in an aseptic manner this space may become infected. The first symptoms to appear will usually be the inability to open the mouth the normal range. The trismus in these cases is not the severe type that is present in the submaxillary region. Infection of the pharyngomaxillary space is not easily differentiated from the peritonsillar abscess. In an infection of the pharyngomaxillary space there will be a displacement of the palatal arch toward the medium line of the mouth without any swelling of the tonsil itself. The uvula will point toward the opposite side. Swelling over the parotid gland is additional evidence of deep infection. These cases are treacherous and may be severe enough to cause jugular thrombosis without external signs of swelling.

Infection of the parotid may be secondary to an infection of the pharyngomaxillary space, or may be the result of an obstruction of its duct, or may arise spontaneously as the complication to an operation. Poor oral hygiene plus the dry parched mouth often seen after surgery is thought to be a factor in these infections. As a preventive measure Coller(7) and his associates advise frequent oral hygiene, acid mouth washes, chewing gum, lemon candy, and adequate fluids following surgery.

The carotid sheath may become secondarily involved from one or all of these compartments. Tenderness and swelling over the carotid sheath and deep sternomastoid muscle is an unreliable sign as this may be caused by swelling of the lymph nodes. One should be guided by the degree of sepsis in these cases and the absence of local signs should not be sufficient reason to rule out the possibility of jugular sheath infection.

Infections of the prevertebral sheath may start high and in this case will naturally extend downward following the longus colli fascia rather than laterally into the pharyngomaxillary space. These retropharyngeal abscesses are often seen in children and may extend downward, protrude forward and cap the larynx causing embarrassment of the respiration. If the infection starts laterally in the prevertebral fascia, it will likely travel forward along the scaleni muscles under the clavicle and into the costocoracoid region of the chest and into the axilla.

Infections beginning in the hypopharynx which penetrate the visceral wall will involve the pretracheal and buccopharyngeal fascia. Disphagia, dyspnea, and hoarseness are the usual symptoms of these infections.

Neck infections, regardless of the region involved, must be considered potentially fatal. Failure to establish drainage at the proper time invites serious complications. The type of incision depends entirely upon where we expect to find pus. It must be adequate so as to give good exposure. Probing blindly for pus through a small incision is contra-indicated. Better a live patient with a scar than a corpse. If the tissues are not badly swollen and congested the land marks of the neck are easily located. The incision is usually made along the border of the mandible so that the submaxillary gland can be elevated. The finger is then inserted beneath this gland and carried backward until the stylomandibular ligament is felt. From this position the finger may be carried upward until the styloid process is felt. External and upward from this process is the pharyngomaxillary space. By carrying the finger downward and forward the tonsil region and the floor of the mouth may be palpated. If necessary the vessel sheath may be drained from this point as it lies deep to the styloid process.

If chills and fever continue after adequate drainage has been established, resection of the jugular sheath should be considered because of the possibility of thrombosis. Blood cultures should be made early and if positive a resection of the vein is indicated. If respiration is difficult and fatiguing the use of oxygen is indicated. Whenever there is cyanosis be it in pneumonia or any serious infection, oxygen should be given in sufficient quantities to reduce the cyanosis. If this does not give relief a tracheotomy may be necessary.

These operations should be performed with local anesthesia. Novocaine infiltration, both superficial and deep, insures the proper cooperation of the patient in a situation that is frequently difficult. The use of morphine should be guarded as the respiration is already embarrassed and the use of an opiate may abolish or weaken the coughing reflex which is the guardian of the upper respiratory tract.

We must be on watch for further complications which are often associated with these infections. Hemorrhage, pneumonia, or osteomyelitis may follow. The infection may cause damage to the kidney or heart. Supportive treatment should be adequate in order that the patient's resistance will be kept at the highest possible level. This consists of plenty of fluids by hypodermoclysis or intravenously, and at times multiple blood transfusions. X-ray therapy aids in localization and abating pain. Prontosil has proved effective in streptococcus infections and its use is usually indicated. Massive doses of Lugol's solution has been advised in parotid infections. The patient should be kept as comfortable as possible with local dressings. The incision should be irrigated frequently with peroxide. If swallowing is difficult nasal feedings are indicated. Complications should be treated as they appear. After drainage has been effectively established, the supportive treatment should be paramount in the mind of the surgeon.

DISCUSSION

DR. W. L. ROSS, (Omaha): I would like to speak about Dr. Boyne's paper in regard to septic sore throat. That is a serious disease, and the mortality is great. It is really, as he stated, due to infection. The septic area is easily diagnosed, because it has a board like feeling. It is very painful and comes on rapidly. As he stated, x-ray is one of the valuable things to ease the pain. Patients who receive an x-ray treatment three or four different times with fractional dosage are very grateful. But that is not the most it does. It will do three things: it will ease pain; stop muscular contraction of a tonic character, and stop the multiplication and motility of the germs. If this is done by repeated fractional doses, nature will take care of the germs present.

I have had quite a little experience along this line, and I know of no method that will control this condition so well, as the use of x-ray treatment.

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PEDIATRIC POINTERS

By John V. Reilly, M. D.

1—Think of the possibility of scurvy rather than rheumatism in a joint condition of children under two years of age.

2—The irritable child without focal infection may be a case of rickets.

3—Pica in children is usually caused by a food vitamin deficiency.

4—Remember pyelitis may be a secondary infection so examine for possible primary foci.

5—Recurrent coughs in children quite often are due to diseased adenoids.

6—A child's daily bowel evacuation habits should be just as closely observed at school age as they were previously. This fact should be impressed on mothers.

7—Remember hydrocele of the cord or undescended testicle can simulate inguinal hernia.

8—A routine coagulation test on all newborn might offset an uncertain future.

9—Croup in an infant, that lasts for more than thirty-six hours should make one suspicious and a throat culture should be taken.

10—Remember a child can have a transitory albuminuria without kidney disease.

EARLY TREATMENT OF POLIOMYELITIS AND IMPORTANCE OF PHYSICAL THERAPY: CHAIRMAN'S ADDRESS

Arthur T. Legg, Boston (*Journal A. M. A.*, Aug. 29, 1936), discusses the benefits to be derived from a long period of competent treatment; namely, the prevention of deformities and the regaining of muscle power. As soon as the first or acute stage is over, that is, when the temperature has returned to normal and the muscles have shown definite paralysis or weakness, orthopedic treatment should begin immediately; for it is then that contractures must be and can be prevented by holding the various affected parts in a neutral position, thus stopping all strain on the affected muscle. In immobilizing the legs and arms, it must be remembered that the neutral position should not be held so continually, or the joints may become stiff. For the immobilization, the author prefers for the legs posterior wire splints or bivalved plasters; they hold the legs in a neutral position but can be removed easily. The posterior wire splints should be removed twice a day and the patient should flex his knee if he can. If he is unable to do this, it should be done manually within the limits of sensitiveness. With deltoid and arm involvement, simple wire splints may be made to hold the arms in abduction with the elbows flexed or extended according to the involvement of the biceps and triceps while the patient is recumbent; that is, holding the arm in extension if the triceps is weak or in flexion if the biceps is weak, or part time in flexion and part time in extension if both are weak. When the patient is over the recumbent stage and is allowed to sit up, the arm should still be kept up on an abduction or platform splint to support the deltoid. If there is any involvement of the trunk muscles, these also should be supported by a corset. Sensitiveness of the patient should be relieved as soon as possible in order to start muscle training. The author found that hot packs and hot baths given two or three times a day for fifteen minutes help best to shorten this stage. Dry heat may be applied, but moist heat is more effective. At the same time rest is essential and patients should be moved as little as possible. No muscle activity should be allowed until the stage of sensitiveness is over, and then a complete muscle examination should be made and muscle training can be started. Fatigue of the involved muscle must be carefully watched for, lest in becoming overtired they become weakened. Rapid regaining of power in one group of muscles over its opposing group will necessitate changes in exercises to prevent unbalance. About the underwater treatment of poliomyelitis the author says that from the buoyancy of the water patients are relieved of the influence of gravity and friction, making it possible to do exercises much more easily than out of water. This affords a sense of accomplishment out of proportion to the actual ability of the weakened muscles, which stimulates the interest and effort of the patient. When shall patients with involvement of the legs be allowed to walk? Patients who with only moderate weakness are making constant gain in muscle power should be kept off their feet for a time, even nine or ten months, since if they are allowed to walk it will be impossible to control their activities. They will overdo and show a loss in muscle power from fatigue. If a patient, however, with moderate or extensive weakness shows but little or no return of power, braces should be applied even after six or seven months. The author further presents the amount of benefit derived from a long period of after treatment, showing charts of the results obtained at his clinic. During the first year, patients with leg and trunk paralysis receiving good treatment improved 61 per cent, those receiving medium treatment only 48 per cent, and those receiving poor treatment but 44 per cent. Again the arms shows the same, the patients receiving good treatment improving 74 per cent and those receiving medium treatment but 48 per cent in the first year. There is some spontaneous recovery of muscle power following an attack of poliomyelitis, owing to the edema of the cord. Many patients severely weakened or paralyzed make a very rapid and often complete recovery of muscle power even without treatment. It is the author's belief that there is no spontaneous recovery after six months. Late return of power may occur when a muscle has been put out of commission by more rapid recovery of its opponent and contracture. This being relieved, the muscle will immediately come back to power.

MEDICAL ASPECTS OF ACCIDENT CONTROL

Leverett D. Bristol, New York (*Journal A. M. A.*, Aug. 29, 1936), shows that the prevention and control of accidents depend on the cooperative efforts of public authorities, governmental agencies, industrial management and employees, insurance companies, technical societies, safety engineers, physicians and nurses, as well as on the public in general. Accidents must be combated in the home, in the school, in public places, in travel and in places of work. Administrative, statistical, medical, engineering and educational activities must be covered in any well rounded safety program. Although much already has been accomplished in safety work, with a marked reduction in the incidence and severity of accidents, much still remains to be done, particularly with reference to accidents in the home and in public places and travel. Most of the results during the last two decades in the prevention and control of accidents have been brought about in industries through the development of well organized industrial safety programs. Recent studies made by some of our operating telephone companies in the Bell System indicate that there are three or four times as many accidents to employees while off the job as there are while they are at work, and five or six times as many days lost on account of accidents occurring while away from work as there are while on the job. This emphasizes the need for a far reaching and forward looking program which will concentrate more and more efforts on public and home safety without a let up in well established industrial safety activities. The physician's duties and responsibilities in an industrial safety program, while having to do somewhat with various administrative, statistical, inspectional and educational activities, necessarily must be related more specifically to preemployment and periodic physical examinations and to emergency medical and surgical examinations and treatment. While early diagnosis through medical examinations is one of the chief factors in the prevention and control of sickness among workers in industry, the inherent value of the preemployment physical examination so far as the prevention of accidents is concerned is in its potential power to make possible the proper placement of workers from the standpoint of accident hazards and prevent prolonged disability and loss of time from work. Of even more value than the preemployment physical examination, in the prevention and control of occupational diseases and accidents, is the periodic check up. For this reason all employees exposed to special occupational hazards of sickness or injury should have a periodic medical examination. First aid is the most important adjunct of accident prevention and control. Physicians must assume the leadership in the teaching of first aid. After history the fundamental elements of an adequate first aid service, the author points out, from various recent studies it is now well established that certain persons have a special liability to be the subjects of accidents just as some individuals are particularly susceptible to diseases. Individual accident susceptibility may be based on such factors as (1) the effectiveness of the visual apparatus, (2) reaction times, (3) reduced energy, (4) the intensive and extensive distribution of attention, and (5) certain kinesthetic impressions or sensations and nervous reflexes making possible more or less automatic performance. The author discusses these points and then stresses that better facilities should be developed in medical schools for teaching the medical aspects of accident prevention and of safety; and adequate graduate instruction should be made more generally available for those planning to specialize in these fields. Prospective doctors, many of whom eventually will be called on to render service particularly in the field of industrial accidents and safety, should be taught the principles of court procedure and testimony, the many aspects of liability and compensation, and the fundamentals of personnel administration and industrial relations. The medical curriculum is in need of various modern amendments to permit it to keep pace with the growing demands made on the intelligence and ability of the present-day physician. In no field are these demands greater than in that of preventive and industrial medicine, public health and safety.

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PROPOSED REVISION OF THE CONSTITUTION AND BY-LAWS

In its report to the Council of the Nebraska State Medical Association in January, the Committee on Constitutional Revision cited numerous deficiencies in organizational phases of our Association. Under the prevailing system there is much duplication of effort and insufficient coordination of results achieved, or of funds expended. It was for the purpose of correcting these inadequacies that the Committee on revision was appointed. After due study and consideration this group devised a document which, if approved by the House of Delegates April next, will tend to replace the outmoded system with a centralized plan of integration and coordination of activities in the Association.

The new Constitution tends to modernize the procedures of the House of Delegates, the creation of offices of speaker and vice-speaker, and add some minor changes to the annual election system. It proposes the formation of a Board of Trustees in whom all business and financial affairs shall be vested. Such centralization of monetary function makes possible a substantial reduction in overhead necessitated by the manifold committee system now in vogue. And who will deny that our Association has become top-heavy with committees? To remedy this top-heaviness a complete reorganization of the different groups is recommended under one major committee with subchairmen in charge of the various activities coordinating the scientific, economic, and public health phases.

The realignment of membership is a noteworthy proposal, especially that part which aims to establish a junior classification designated for interns serving in Nebraska hospitals. Under the present status interns are required to pay regular membership dues. Needless to say, a young man earning little or nothing during his intern-year can seldom be parted from ten dollars even if he were fortunate enough to possess such a sum. By the time he is able to pay dues he has lost whatever little interest he may have had in organized medicine. Make him a part of the Association at a time when he attaches importance to such membership and he will not only enjoy its importance, but indeed acquire the habit of *belonging*. It will become a part of him.

Thus the changes proposed by the new constitution offer indisputable advantages over the present related but uncoordinated set up. They tend to strengthen the Nebraska State Medical Association by simplifying procedures, rearrangement of functioning groups in an effort to meet with a minimum of confusion the new trends in our social order. Besides enabling the Association to function more smoothly, the new constitution will make it possible for organized medicine, through prestige as well as service, to exert a better influence over the various systems of medical activities now under governmental or private auspices, and also over the much publicized problem of medical care now under discussion by political and philanthropic aspirants.

OUR SPEAKERS' SERVICE

The question has been asked more than once, "Why a Speakers' Bureau?" County medical societies have been in existence for years; they have had programs periodically and usually with good attendance when the weather permitted. They have had local and guest speakers; they chose whomever the committee thought particularly qualified, etc. Why a new bureau?

In answer we may state that the Speakers' Bureau in no way seeks to interfere with County Society activities, nor does it propose to assume any of the responsibilities of these unit organizations. On the contrary, its aim is to aid, upon request, local medical societies in the arrangement of their scientific programs, and where feasible, to supply speakers for lay meetings in the different communities of the state, under strict auspices of the local profession.

The Speakers' Bureau is attempting to fill a definite need occasioned by the ever-changing trends in the social and scientific aspects of medicine. Not only are politicians and social workers interested in medical practice, but indeed the public at large is showing an increasing desire to understand the situation. Years of radio and press education have created an unprecedented curiosity about health, and steady propaganda by parlor philosophers has induced people to talk about "inadequacy" of medical care.

Lay education, or shall we say, re-education, has become an urgent necessity. The public is entitled to the truth of basic principles on health and disease processes, and also to factual information on the economic phases pertaining to these problems.

On our own side we need only to contemplate the recent therapeutic additions to the practice of medicine in order to appreciate the value of coordinated scientific programs of a progressive medical society: insulin for the treatment of diabetes, liver extract for pernicious anemia, certain endocrine products in gynecological conditions, sulphanilamide, to mention only a few of the recent developments with a need for clarification. The Nebraska State Medical Association is not yet in the position of establishing mobile post graduate courses. The Speakers' Bureau, however, offers facilities which, though not intended to supplant the value of formal graduate education, medical societies may utilize in an endeavor to supply practical advantages to their members as well as to the citizens residing within the different areas of the state.

THE NEXT ANNUAL SESSION

An awareness of the rapidly changing social and economic fabric as it affects physicians pervades all medical meetings in the present day. This fact is so apparent that those who arrange the scientific sessions of our County and State Medical meetings sometimes find it hard to make them competitively interesting. The scientific program continues, however, to remain the most vital part of our annual meeting. Judging from the comments of the members, it is believed that the 1936 and 1937 programs were very attractive. The Program Committee this year has provided an unusually fine list of guest speakers They were chosen because they are qualified both by teaching and clinical experience to present their matter comprehensively within the allotted time. They have been assigned topics of general medical and surgical interest. From our own membership a variety of subjects of current well established scientific value will be offered. At the luncheons and the dinner our out of town guests will speak briefly on a scientific subject chosen by the members. Time has been allotted to a moving picture to be shown at one of the Lincoln Theatres, which, it is believed, will be of both professional and lay interest.

The next issue of the Journal will contain the complete program. The time spent upon arranging it and the talent in it warrant your attendance if at all possible. In addition to renewing old friendships and making new ones, you will thus dsicharge an obligation to organized medicine in Nebraska.

—J. W. Duncan, Program Committee.

COUNCILOR MEETING

JANUARY 17, 1938

The first meeting of the Councilors was held at the Omaha Athletic Club in Omaha, January 17, 1938, at 2:00 p. m. The meeting was called to order by President Davis. The following members were present: Drs. Overgaard, Hompes, Boyer, Brush, Neumarker, King, Conrad, Douglas, Bryson, Rork, Platt and Cooper, Past-President Covey and President-Elect Davis. In addition to these the following guests were present: Vice-President G. E. Charlton, and Drs. W. P. Wherry, J. D. McCarthy, J. Jay Keegan, E. S. Wegner, E. G. Johnson, Claude A. Selby, Morris Nielsen, B. F. Bailey, C. T. Uren, Earl Sage, A. F. Tyler, W. H. Heine, H. M. Jahr, R. B. Adams and Mr. M. C. Smith.

The first order of business was the election of the President. It was moved and seconded that Dr. King of York be elected president of the Council.

Dr. A. P. Overgaard was reelected Secretary of the Council.

The Committee reports were next in order of business.

Dr. E. S. Wegner was called upon for a report of the Campaign Committee. Dr. Brush moved that the report be accepted and placed on file. Seconded and carried. Dr. Overgaard then moved that appreciation be expressed to the chairman of the Campaign Committee for the good work done. Seconded and carried.

Dr. C. W. M. Poynter's report on the Advisory Committee was read by Dr. Adams. It was moved and seconded that the report be accepted and placed on file. Carried.

Dr. Morris Nielsen gave a report of the Insurance Committee. Dr. Nielsen also read letters from the Harry A. Koch Company and the Metropolitan Casualty Company. He stated that he felt the Insurance Committee had failed but they would like to continue if the Council so desired. Dr. Douglas moved that this report be accepted and that the Committee continue and information covering this matter be printed in the Journal as recommended by the Committee. Seconded and carried.

Dr. Adams gave the Secretary-Treasurer's report. Dr. Overgaard moved that the report be accepted and referred to an Auditing Committee consisting of three members, and that it be published in the Journal. Seconded and carried.

Dr. King appointed the following Auditing Committee: Dr. J. J. Hompes, Dr. A. A. Conrad, Dr. O. R. Platt.

The report of the Student Loan Fund Committee was given by Dr. Overgaard. It was moved that the report be accepted and published, and referred to the Auditing Committee. Seconded and carried.

Dr. Claude A. Selby was called upon to give a report of the Committee on Constitutional Revision. Dr. Overgaard moved that the report be accepted and published in the Journal. Seconded and carried. Dr. Bryson moved that the proposed revision of the Constitution and By-Laws be published in the April Journal. Seconded and carried. Dr. Bryson then made a motion that the President of the State Medical Association be requested to call the House of Delegates meeting one day previous to the regular session of the State Association. Seconded and carried.

Dr. Earl Sage gave a report of the Maternal and Child Health Committee. After much discussion it was moved by Dr. Bryson that the report be accepted and placed on file. Seconded and carried.

Dr. B. F. Bailey gave a short verbal report of the Committee on Public Policy and Legislation. Dr. Overgaard moved that this report be accepted and hearty appreciation be expressed to the Public Policy Committee for the work done. Seconded and carried.

In the absence of Dr. Rowe, Dr. Bailey read the report of the Sub-Committee on Planning. It was moved that this report be accepted and placed on file. Seconded and carried.

A report of the Cancer Committee was given by Dr. James F. Kelly. Dr. Conrad moved that the report be accepted and published in the Journal. Seconded and carried.

Mr. M. C. Smith, the Executive-Secretary then gave his report. It was moved by Dr. Bryson that the report be accepted and published (the paragraph regarding the legislature to be deleted), and that Mr. Smith be commended for his good work. Seconded and carried.

In the absence of Dr. E. W. Hancock the report of the Tuberculosis Committee was read by Dr. Cooper. Dr. Covey moved that the report be accepted and published in the Journal. Seconded and carried.

Dr. C. T. Uren gave a report of the Committee on Prevention and Amelioration of Deafness. It was moved by Dr. Douglas that the report be accepted and published in the Journal. Seconded and carried.

Dr. J. D. McCarthy gave a report as Chairman of the Speakers' Bureau. Dr. Overgaard moved that the report be accepted and placed on file. Seconded and carried.

Dr. Overgaard made a motion that Dr. John B. Potts and Dr. Roy Dodge, both of Omaha, be recommended to the House of Delegates for honorary membership. Seconded and carried.

In the absence of Dr. J. E. M. Thomson the report of the Fracture Committee was read by Dr. Overgaard. It was moved and seconded that this report be accepted and placed on file. Carried.

Dr. W. P. Wherry gave a verbal report of the Committee on Medical and Public Health Education. It was moved and seconded that the report be accepted. Carried.

Dr. Wherry stated that Dr. Hamilton H. Anderson, a member of the A. M. A. staff would be in Omaha Wednesday, January 19th, and that the officers of the State Medical Association and members of the Council were welcome to attend this meeting.

At this point adjournment was taken for dinner.

The second meeting of the Council was held at the Omaha Athletic Club in Omaha, January 17, 1938, at 8:15 p. m. The following members were present: Drs. Overgaard, Hompes, Boyer, Brush, Neumarker, Conrad, Douglas, Bryson, Rork, Platt, Cooper, Fouts, Covey, and Davis. The following were also present: Drs. G. E. Charlton W. P. Wherry, J. D. McCarthy, E. S. Wegner, E. G. Johnson, C. A. Selby, H. M. Jahr, R. B. Adams, and Mr. Smith.

In the absence of Dr. King, Dr. Davis presided at this meeting.

At this time there was a great deal of discussion regarding the Committee on Medical and Public Health Education.

Dr. Covey moved that until such time as revision of the Constitution and By-Laws is made effective, the President of the Council request the chairmen of the sub-committees to conform to the action of the House of Delegates placing them under the Committee on Medical and Public Health Education thus coordinating all their activities." Seconded and carried.

Dr. Fouts then spoke on the Grievance Committee of the New York State Medical Association. He called upon Mr. Smith for remarks on this subject.

The discussion again turned to the question of raising money for the Committee on Medical and Public Health Education.

Dr. Covey moved that as an emergency the Council legalize the withdrawal of funds from the monies accumulated in the Medico-Legal Fund not to exceed $1,000.00 per year, the original fund never to be depleted below $3,000.00. This money to be earmarked for the use of the Committee on Medical and Public Health Education. Seconded and carried.

Dr. Wherry, chairman of the Committee expressed appreciation to the Council and stated that the Committee would proceed.

A report of the Committee on Journal and Publication was called for. Dr. Adams stated that Dr. Long had always made this report and due to Dr. Long's death there was hardly anybody able to give this report.

A report of the Program Committee was called for. Dr. J. W. Duncan, the chairman, was not present and no report was given.

Dr. R. W. Fouts gave a report of the Medico-Legal Advisory Committee. It was moved and seconded that the report be accepted and placed on file. Carried.

Dr. Fouts was called upon to give his report as Delegate to the A. M. A. He stated that his report was not ready.

It was moved that the report of the Sub-Committee on Ophthamology submitted by Dr. Earl B. Brooks be accepted and placed on file. Seconded and carried.

Dr. Hompes gave the following report of the Auditing Committee: The Auditing Committee appointed by the President of the Council to audit the financial statements of the Nebraska State Medical Association for the year 1937 submitted and herewith appended respectfully report that we have examined afore mentioned report and believe it to be correct. Signed, Otis R. Platt, A. A. Conrad, J. J. Hompes.

Dr. Bryson moved that the President and Secretary enter into a contract with Mr. M. C. Smith at the same salary for the coming year. Seconded and carried.

A motion was made that the Council adjourn. Seconded and carried.

SECRETARY'S REPORT

JANUARY 17, 1938

At the close of the year 1937 the Nebraska State Medical Association had 1099 active and honorary members. In 1936 there were 1050. This was a gain of 49 members. During the year 68 became delinquent and 108 new members were obtained. During the year also the usual routine measures were handled as in former years, as, letters to all delinquents and to all eligible non-members.

The year 1937 also saw a number of new activities begun.

1. Plans were set in motion and a committee went to work on a complete revision of the Constitution and By-Laws.

2. Under the Federal government Social Security Law a great number of new activities of a Public Health nature were also set in motion. The State Department of Health has been greatly enlarged both in personnel and budget. A number of valuable men have been added to the staff. All of this made it necessary for the State Medical Association to become active in this work or fall behind and have the work done by others. As a result a new Committee called the Committee on Medical and Public Health Education was created. A large advisory committee to this committee was also brought into being. In addition a number of sub-committees were developed each to do its separate work, subject to the direction of the Committee on Medical and Public Health Education.

These committees are:

a. Tuberculosis Committee.

b. Maternal and Child Health Committee.

c. Committee on Prevention and Amelioration of Deafness.

d. Committee of Venereal Diseases.

3. The Committee on Public Policy and Legislation had its work largely increased. In order to take care of the increased load on this committee a number of sub-committees also became necessary.

a. Sub-Committee No. 1—Advisory.

b. Sub-Committtee No. 2—Planning. This Committee works with the State Assistance Committee and has been able to get the services of a Federal man to make a public health survey of the state and submit a report.

c. Sub-Committee No. 3—Ophthamology.

The above named committees with the other longer established committees will have their respective reports at this meeting.

The Unicameral Legislation also made it possible to begin a T. B. survey of the state by providing the necessary money. It also made possible a committee for the handling of Poliomyelitis Serum.

On the whole your Secretary feels that 1937 has been a year of major importance to the Association. He also believes that the State Association is in a splendid condition in that it has been able to get a large number of its members interested and active, and, things have not been left to be done by a few or as in some cases by one man.

Our Executive Secretary has had a busy year and in your Secretary's opinion has been of great value to the Association in many ways.

—R. B. Adams, Secretary.

GENERAL FUND

STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS

January 1, 1937 to December 31, 1937

Cash Receipts:		
Membership Dues	$10,830.00	
Dues for 1938	10.00	
Total Cash Receipts		$10,840.00
Cash Transferred:		
Journal Fund	$ 1,624.50	
Medico-Legal Fund	1,083.00	
Total Cash Transferred		$ 2,707.50
Balance Available for General Fund		$ 8,132.50
Withdrawals:		
Conservative Savings & Loan Assn		$ 373.75
Cash on Hand January 1, 1937		124.23
Check from Dr. E. S. Wegner		105.26
		$ 8,735.74
Cash Disbursements:		
Salaries—R. B. Adams		$ 600.00
M. C. Smith		3,000.00
Rent	$ 180.00	
Telephone	98.28	
Bank Charge	8.34	
Dr. R. B. Adams, office expense	128.00	
M. C. Smith, expenses	2,488.74	
Councilor expense	320.15	
A. M. A. Membership Cards	12.50	
Dr. F. A. Long, expenses for 1936	100.00	
Dr. Geo. W. Covey, Mileage and Lunches, T. B. Committee	19.40	
Program Committee	32.40	
Lincoln Printing Company	53.50	
First Trust Company (Bond—Dr. Adams)	5.00	
Dr. Geo. W. Covey, telephone calls and telegrams	3.46	
George Brothers, 1 Journal No. 365-15-2-J.	1.85	
Hess & Swoboda, spray, Long	10.00	
Stella Carroll, resolutions, Long	3.00	
Star Mail Pub. Co., 1000 No. 10 Env.—Dr. Long	9.00	
George Brothers, office supplies	1.70	
Union Loan & Savings Assn	7.73	
Dr. B. F. Bailey, r.r. fare Atlantic City, A. M. A	92.00	
Dr. E. S. Wegner, Campaign Committee	120.00	

Expense of speakers at annual meeting		538.32	
Huse Publishing Company, programs		84.39	
Alice Gary Gilchrest		132.00	
Olive Larson, expenses at annual meeting		12.50	
Dr. R. W. Fouts, r.r. fare Kansas City, 1936	$13.00		
(A. M. A.) r.r. fare Atlantic City, 1937	80.40	93.40	
Star Mail Pub. Co., 500 postcards imprints—Dr. Long		7.75	
Harry R. Swanson, fee for non-profit making corp.		1.00	
Dr. R. W. Fouts, rent		150.00	
Committee on Public Policy and Legislation		51.15	
Andrews-Newens, multigraphing		2.89	
Total Disbursements for Year 1937			$8,368.45
Balance Cash on Hand December 31, 1937			$ 367.29

—R. B. Adams.

GENERAL FUND

STATEMENT OF INVESTMENTS

January 1, 1937 to December 31, 1937

Investments on Hand January 1, 1937:			
Cash Held by Omaha National Bank		$ 26.62	
Securities Held by Omaha National Bank		6,676.25	
			$ 6,702.87
Balance in Account—Omaha Loan & Bldg. Assn.		$ 712.70	
Balance in Account—Nebr. Central Bldg. & Loan		1,068.22	
Balance in Account—Conservative Savings & Loan		1,868.80	
Balance in Account—United Savings & Loan Assn.		1,157.29	
			$ 4,807.01
			$11,509.88
Transferred:			
To checking account		$ 373.75	
Bond Purchased		142.54	
Bond Purchased		213.64	
Bond Purchased		291.05	
			$ 1,020.98
			$10,488.90
Additions to Investments During Year 1937:			
Interest Credits—Omaha National Bank		$ 92.07	
Less amt. used to purchase bond		46.52	
			$ 45.55
			$10,534.45
Dividend Credit—Omaha Loan & Bldg. Assn.		$ 30.05	
Dividend Credit — Conservative Savings & Loan		14.34	
Dividend Credit—United Savings & Loan		6.94	
			$ 51.33
			$10,585.78
Additional Investments Purchased:			
$225 U. S. Savings Bond	$168.75		
$300 U. S. Savings Bond	225.00		
$400 U. S. Savings Bond	300.00		
			$ 693.75
			$11,279.53
Trustee Fee			10.00
			$11,269.53
Balance Omaha National Bank		$ 62.17	
Securities Held by Omaha National Bank:			
$1,000.00 Wm. H. Harms loan, Peters Trust Co.	6%		
370.00 Zannie X. Marshall Ctf. No. 577	5¼%		
U. S. Treasury Bonds:			
400.00	3%		
100.00	2½%		
50.00	3¼%		
450.00	3¼%		
300.00	3¼%		
150.00	3¼%		
400.00	2¾%		
U. S. Savings Bonds:			
450.00 Maturity Val.	$600.00		
225.00 Maturity Val.	300.00		
281.25 Maturity Val.	375.00		
168.75 Maturity Val.	225.00		
225.00 Maturity Val.	300.00		
300.00 Maturity Val.	400.00		
Real Est. Mtge. Bond:			
2,500.00 John O. Wentworth			
		$7,370.00	
			$7,432.17
Balance in Account—Omaha Loan & Bldg. Assn.		$ 584.50	
Balance in Account — Nebraska Central Bldg. & Loan		854.58	
Balance in Account — Conservative Savings & Loan		1,525.10	
Balance in Account—United Savings & Loan Assn.		873.18	
			$3,837.36
Investments on Hand January 1, 1938			$11,269.53

—R. B. Adams.

JOURNAL FUND

STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS

January 1, 1937 to December 31, 1937 as compared to January 1, 1936 to December 31, 1936

	1937	1936
Direct Journal Receipts:		
Advertising Space	$3,208.14	$3,313.46
Cuts	392.17	195.32
Copies Sold	8.10	15.90
Subscriptions to Journal	12.50	30.00
Dividend—Cooperative Advertising Agency	314.01	292.66
Total Direct Receipts	$3,934.92	$3,847.34
Share Dues Rec'd—General Fund	$1,624.50	$1,575.00
Withdrawals:		
Omaha Loan & Bldg. Assn.	$ 260.98	$ 318.23
United Savings & Loan Assn.	212.96	....
Union Loan & Savings Assn.	10.57	....
Union Loan & Savings Assn.	260.00	257.50
Standard Savings & Loan Assn.	....	74.96
Total Receipts—All Sources	$6,303.93	$6,073.03
Direct Journal Disbursements:		
Salaries:		
Dr. F. A. Long	$1,000.00	$1,200.00
Rosa Robertson	....	28.80
Margaret Heebner	....	12.96
Olive Larson	900.00	799.59
Dr. Herman M. Jahr	100.00	....
	$2,000.00	$2,041.35
Publication Expense:		
Huse Publishing Company	$3,831.83	$3,721.75
Baker Engraving Company	367.17	209.81
Bank Charge	2.43	3.56
Universal Press Clipping Bureau	42.00	42.00
Capitol Engraving Co.	....	21.90
Springview Service Club, refund on cl. ad	1.00	....

Jesse Clark, refund on amt. sent for Journal	.65	....
Total Direct Disbursements	$4,245.08	$3,999.02
Excess Disbursements over cash	$	$ ....
Excess Cash over Disbursements	310.02	251.17
Total Cash on hand—January 1	251.17	218.51
Total Cash on hand—Jan. 1, 1938	310.02	....
Total Cash on hand—Jan. 1, 1937	....	251.17

JOURNAL FUND

STATEMENT OF INVESTMENTS

January 1, 1937 to December 31, 1937

Investments on Hand January 1, 1937:			
Balance in Account—Omaha Loan & Bldg. Assn.			$1,304.92
Balance in Account—Standard Savings & Loan			674.59
Balance in Account—Union Loan & Savings			1,295.96
Balance in Account—United Savings & Loan Assn.			846.79
Balance in Account—Omaha National Bank:			
Investments		$400.00	
Cash on hand		45.77	445.77
			$4,568.03
Additions to Investments During Year:			
Dividend Credits—United Savings & Loan			$ 5.08
Dividend Credits—Union Loan & Savings			22.88
Dividend Credits—Omaha Loan & Bldg. Assn.			26.24
Interest Credits—Omaha National Bank			11.50
			$4,633.73
Cash Transferred:			
Liq. Dividend—United Savings & Loan			$ 212.96
			$4,420.77
Withdrawals:			
Omaha Loan & Bldg. Assn.		$ 260.98	
Union Loan & Savings Assn.		259.37	
Union Loan & Savings Assn.		10.57	
Union Loan & Savings Assn.		262.43	
			$ 793.35
Total Investments on Hand January 1, 1938			$3,627.42
Represented by:			
Balance in Omaha Loan & Bldg.		$1,070.18	
Standard Savings & Loan		674.59	
Union Loan & Savings		786.47	
United Savings & Loan		638.91	
Investments	$400.00		
Cash	57.27		
		457.27	
			$3,627.42

MEDICO-LEGAL FUND

STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS

January 1, 1937 to December 31, 1937

Cash Receipts:		
Share Dues Received from General Fund	$1,083.00	
Cash on Hand January 1, 1937	1,911.68	
		$2,994.68
Cash Disbursements:		
Dr. R. W. Fouts, salary	$ 600.00	
Dr. R. W. Fouts, expenses	109.70	
Total Cash Disbursements		$ 709.70
Balance on Hand December 31, 1937		$2,284.98

—R. B. Adams.

MEDICO-LEGAL FUND

STATEMENT OF INVESTMENTS

January 1, 1937 to December 31, 1937

Investments on Hand January 1, 1937:		
Cash Held by Omaha National Bank	$ 182.93	
Securities Held by Omaha National Bank	5,750.00	
Balance in Account—United Savings & Loan	1,157.29	
Total January 1, 1937		$7,090.22
Interest Credited—Omaha National Bank	$ 168.04	
Dividend—United Savings & Loan Assn.	6.94	
		$7,265.20
Trustee Fee	$ 10.00	
Investments on Hand January 1, 1938		$7,255.20
Used $487.50 to buy bonds, income derived from the following:		
Withdrawal—United Savings & Loan Assn.	$ 291.05	
Interest—Omaha National Bank	168.04	
Dividend — United Savings & Loan Assn.	6.94	
Used from Balance carried forward	21.47	
	$ 487.50	

Securities:

$ 100.00	U. S. Treasury Bond 3%	
500.00	U. S. Treasury Bond 3¼%	
100.00	U. S. Treasury Bond 3¼%	
1,150.00	U. S. Treasury Bond 2⅞%	
3,400.00	U. S. Treasury Bond 2⅞%	
300.00	U. S. Treasury Bond 3¼%	
200.00	U. S. Treasury Note 2½%	
187.50	Maturity Val. $250.00 U. S. Savings Bonds	
300.00	Maturity Val. $400.00 U. S. Savings Bonds	
		$6,237.50
Cash Held by Omaha National Bank		144.52
Balance in Account—United Savings & Loan Assn.		873.18
		$7,255.20

—R. B. Adams.

REPORT OF COMMITTEE ON CONSTITUTIONAL REVISION

The Committee on Constitutional Revision was authorized by the last session of the House of Delegates conforming with recommendations made by the President calling for revision of the Constitution with a view of modernization of our organization and the proper compiling of all salient necessary changes to accomplish such a purpose.

The committee thus created set about at once to study the situation and to accumulate material, realizing more and more as progressive study was given the subject, the enormity of the burden and the responsibility thusly placed upon us. We have purposely progressed slowly though we have studied much and now have in our possession an abundance of material accumulated from most every State of the Union as well as from the various available avenues of the American Medical Association.

One need only to casually peruse our present Constitution and By-Laws to realize that something is essential to be done; upon study of it alone we found many existing repetitions and contradictions which have come about through the years of repeated amendments: some evidently made without sufficient study of corollary sections, this itself making an exactingly tedious task.

There have thus far been only informal sessions of the Committee, although its personnel has been supplied with material that they may individually study our basic needs, correlate them, and finally present as a unit unbiased opinions of necessary changes. Thereby we hope to incorporate the very best and simplest verbiage and condensed context possible to assure clarity of meaning and facility of proper function.

In our activities in accumulating material for use from other States, we have found that many States have but recently revised and adopted new Constitutions and By-Laws to conform to the present trends of time and their advanced needs; the material thus collected is voluminous and requires much study and comparison in order to select and apply the proper sections best adapted to our needs; we have found it to be valuable to the task you have assigned to us.

BUSINESS METHODS

With even a cursory study of the situation your Committee has long since agreed unanimously that many of our business methods as now employed are abviously obsolete and exceedingly expensive of operation; for instance we have at present nineteen different Committees set up, with many repetitions in duties and at least partially in personnel, some members serving upon as many as three Committees.

Another instance is the status of our official publication "The Journal," in which we find the business office in one City, the Editor in another and printing done in still a third. Certainly it can well be said without the slightest fear of contradiction or intention of destructive criticism that a continuation of such methods is most absurd, and tantamount to necessarily poor business and professional accomplishments.

MEMBERSHIP

In the light of past experience pertaining to the activities certain admittedly irregular practitioners of Medicine who are members of this organization, much difficulty was experienced to enable us to even attempt control of such situations, simply because in our own set-up the machinery is either entirely lacking or too cumbersome to permit of direct and definite action, a situation which your committee hopes to be able to satisfactorily simplify at the very outset. Several methods of membership classifications present themselves in order to provide hospital internes, and recent graduates with suitable incentive at the outset to become part and parcel of organized Medicine and further, to provide surcease to those who are no longer active in practice, and to recognize properly long and faithful service to organized Medicine.

ORGANIZATION

Your committee believes the backbone of the State Medical Association is the Council of the Association, and that the success or failure of the Association may be traced directly to that Council and its personnel. In whatever may be done your Committee's purpose shall be to strengthen and perpetuate these elements upon which rest the continued success of, and proper responsibilities for the welfare of the Association at large by maintaining and adhering to the Association's basic foundations and tenets.

It is our hope that through changes in method that the application of some of the modern convention procedures may be adapted that business coming before Annual Conventions in the future may be done accurately and with despatch—to this end we believe there should be added to the official family of the Association at least a Speaker and Vice Speaker of the House of Delegates; whose duties shall be well defined and upon whom definite responsibilities encumber. There appear to be simpler and more effective methods in vogue for the election of some of our elective officers, tending to eliminate the elements of internal strife and petty politics that often creep into our annual Conventions and detract from scientific endeavors and social well being. We thoroughly believe some method of repair of this should be adopted, as well as the creation of definite and prescribed Convention Reference Committees to facilitate proper study and presentation of such business as may come before the House of Delegates and the Council.

After careful study, it is evident to us that in the interest of good business and active progress, provision should be made that the President Elect of the Association be required to submit a complete list of his appointive Committeemen and others to this Council at its January meeting preceding his accession to the Presidency, this for study, recommendations and ultimate ratification to the end that no period of relaxation may occur in any worthy activity of our Association, also that a proper checkup may be made by the Council to promote the furtherance of efficient and wise action in every department of the Association.

UNIFIED REPORT

We recognize the fact that each year there comes to the Association many additional opportunities to enhance our effectiveness in every sense of its service to science, to the public and to itself, many of such opportunities must necessarily be abandoned or postponed until either available funds may be obtained or suitable machinery may be authorized; sometimes neither of which are possible of accomplishment under our present methods of operation and thereby both the incentive of individuals may be squelched and resultant proper advancement made impossible. Much can be done to remedy such shortcomings by a centralization of all the Associations activities into a single Association headquarters of sufficient size and personnel to permit quick concerted action, prevent duplicities of effort and expense, and to concentrate ourselves into a single active unit through which the work of our manifold activities may all amanate. This all may be attained by careful, studious and wise changes in our Constitution and By-Laws, and still preserve to ourselves inviolate the freedom of action and basic professional tenets handed down to us by those who founded so well this Association, and which through these sixty-nine years of experience has stood adamant. Your revision Committee begs to remind you that it well realized the enormity of its tasks, the graveness of its responsibilities, and further that it has a definite duty not only for today, this year, tomorrow, or next year, but for all time to come, that those in the future may be permitted, as we have, to enjoy the freedom of personal effort and the satisfaction of group action upon the same basic elements guaranteed in our charter, to the end that, as outlined our original Constitutional preamble which we herewith quote as our pledge of service to you, that the integrity as our Association may continue to maintain.

"The purpose of this Association shall be to federate and bring into one compact organization the entire medical profession of the State of Nebraska, and to unite with similar Associations in other states to form the American Medical Association, with a view to the extension of medical knowledge, and to the advancement of medical science; to the elevation of the standard of medical education, and to the enactment and enforcement of just medical laws; to the promotion of a friendly intercourse among physicians, and to the guarding and fostering of their material interest; and to the enlightment and direction of public opinion in regard to the great problems of state medicine, so that the profession shall become more capable and honorable within itself, and more useful to the public in the prevention and cure of disease, and in prolonging and adding comfort to life."

CONCLUSIONAL ANALYSIS

(1) In order that the work of this Committee may be cognizant of every phase of the Association's activities we shall in the very near future request each and every officer of this association, as well as each Committee Chairman to submit to us in detail the activities coming under his particular jurisdiction, as well as his recommendations for a more successful consummation of his official duties.

(2) To this end we welcome individual constructive suggestion from any member of our association.

(3) To insure proper consideration and that definite action be possible for the consideration of impending changes in your Constitution and By-Laws we beg permission to first, have a complete draft of the New Constitution and By-Laws printed in the May issue of "The Journal" and second that the House of Delegates be called into a Constitutional convention at least one day prior to the usual initial Annual Convention date to insure a clear and concise understanding on the part of each delegate in all the phases of our Constitution and By-Laws and its proposed changes together with the reasons therefor.

Respectfully submitted,
C. A. Selby, Chairman,
E. G. Johnson,
Homer Davis,
Committee on Constitutional Revision.

EXECUTIVE SECRETARY'S REPORT

OF THE COUNCIL OF THE NEBRASKA STATE MEDICAL ASSOCIATION

JANUARY 17, 1938

It is interesting to look back over the year just ended and note some of the accomplishments and progress of the Nebraska State Medical Association. Progress, which at times has appeared all too slow, yet when viewed in the aggregate, adds up to a rather satisfactory conclusion.

In the first place our membership has increased, even though the number of men in practice in the state has decreased, and the State Association as a whole now stands well above the average in membership for the United States.

One of the counties in our state has been exhibited to the world by the National Tuberculosis Association as a model county for the handling of this disease and looking forward to its final eradication. This recognition is due entirely to the tireless efforts of our Tuberculosis Committee, and many individuals, in the profession, and to them must go our appreciation for their efforts and the great amount of time which they have given to this worthwhile cause, thus bringing additional esteem and honor to this profession. The Tuberculosis survey started last year under President Covey is now going forward and is spreading to other counties in the state, from the original survey made in York county.

A Speaker's Bureau has been established under competent leadership and this important additional department of this Association has been doing yeoman service in furnishing scientific programs for constituent societies, thus stimulating attendance and interest in many society meetings. This help is of great benefit to county societies and is greatly appreciated.

Ten different Refresher Courses have been put on in the state under the direction of the M.C.H. Committee; one of the most active committees during the past year. These courses have also stimulated interest in scientific matters in the component societies, and each of the courses has been well attended and pronounced a success by those in attendance. Any activity of the State Association or the county units which stimulates interest of the individual, thus bringing together the practitioners of the state under a common banner, will stimulate interest in Association work and thus tend to build up our organization. Thus medical education and postgraduate instruction is advanced to the benefit of both the individual and the public.

One new component society has been organized during the year. The societies in Franklin and Harlan counties had become inactive, and since the membership was small in each county, they were joined together in one unit and a society formed which should continue as one of our active societies. This society asked for and received one of the M.C.H. Refresher Courses shortly after its organization, which course was well attended and the profession of these two counties bound closer together.

Reports of the various committees at this meeting will show a continued activity and progress throughout the year, and it would only be duplication for your Executive Secretary to recount his connection with all of these various phases of the work. Hence this report is confined to matters pertinent to this office.

Membership: Our membership this year has made a record of which we have reason to be proud. Facing another year of only partial crops in small areas of the state and almost complete failure in others and with a net loss of 38 physicians during the year, we have been able to show the substantial increase of 49 members for the year.

During the fore part of the year, and before the 1937 annual meeting a "Medical Derby" in which the various councillors raced in membership for a silver loving cup undoubtedly brought many new memberships for the year. Following the annual meeting and under orders of the president, Dr. Roy W. Fouts, your executive secretary made a canvass of non-members in the outstate counties. This canvass covered individual calls on 171 non-members in the state with a result of some added members and promises of many more for 1938. Practically every non-member outside of Lincoln and Omaha was contacted personally in his office. They were informed of the work of the State Association in their behalf, and an effort was made to acquaint them with their obligation to their profession and to the only organization which was endeavoring to maintain a high type of medical practice within the state.

This personal contact campaign, together with the Medical Derby, no doubt will account to a large extent for an increased membership for the year, and too, this increased membership may be taken also as evidence that the increased and manifold activities of the State Association, which extend from border to border of our state, are beginning to bear fruit for the individual practitioners and showing to them some tangible value to their membership in this organization. We have every reason to believe that membership for the coming year will again be increased, since our personal campaign was made late in the year and many did not feel justified in paying for a full year's membership at that point. Many of these have promised to become a part of organized medicine during 1938.

Following is a table which tells at least in part the membership story for 1937:

In Active Practice Jan. 1, 1937			1464
Members died during 1937	9		
Non-Members died in 1937	21		
Total Deaths in 1937		30	
Members moved out of state 1937	23		
Non-Members moved during 1937	15		
Total moved out of state		38	
Total loss during 1937		68	
New physicians during 1937		29	
Net loss for 1937			39
Total in Practice Jan. 1, 1938			1425
Members Dec. 31, 1937			1099
Members Dec. 31, 1936			1050
Net Membership gain for 1937			49

May we call your attention to this table and the detailed report on membership. This report is made possible by a complete set of records which has been built up in the Executive Secretary's office during the past year. The system has been established on a card basis, and while it is not yet as complete as we hope to have it eventually, we have it so built at the present time that our information is to a high degree correct. In keeping these records we maintain a separate filing card for every physician who is in practice in the state. On this card is kept his name, address, age, school and any other information which we can obtain from time to time. This card shows whether or not the physician is a member, is eligible and should belong, is retired or is non eligible for membership. Also a record of offices held in county and state societies, if any. These card records are watched closely and when a physician moves or his status as to eligibility is changed, this record is made on the card. When a physician dies we make a note of the date of death and cause if we can obtain it, and his card is filed away for future reference. It can readily be seen that such a record properly maintained will become invaluable in the future.

With a total of 1425 men in active practice, and a membership of 1099 we have a state membership of approximately 77%. While this percentage is not entirely satisfactory we note that it is considerably higher than the average for the United States. A recent communication from the A. M. A. tells us that the United States average for membership of men in active practice is 66%, which leaves us 11% higher than the average for the country as a whole. In comparing our percentage of membership on a county basis we find 45 counties in the state with a membership above 80%. 17 of these counties are 100% and 9 of them are above 90%. We still have left 16 counties above 70%, and only 24 counties are below the United States average. Many of these are small counties where just one or two additional memberships would raise the percentage of membership to the higher brackets. I hope that the Council will recognize this condition in their own Councillor Districts and make a real effort to raise that percentage during the coming year.

Medical Facts: In the report of the Executive Secretary for 1936 we showed that our country newspaper column was going to 30 newspapers with a total of 35,049 in circulation, and estimated that it was reaching approximately 169,000 people weekly. During the past year this has been raised to 65 papers with a combined circulation of 71,289 and is now reaching approximately 320,081 people weekly.

We wrote to these newspapers a short time ago and asked for comment and criticism, with a view of learning something of the value of the column and whether it was of enough value that it should be continued. The comments received were very favorable and confirm our belief that this department is a worthwhile one and of great benefit both to the profession and the public. In answering our inquiry one publisher said, "We find this a department that is followed by most of our readers." Another says, "Please keep the 'Medical Facts' coming. We think they are very good articles and our readers have shown a great deal of interest in them." Still a third tells us, "I would say that the column 'Medical Facts' which has appeared in our newspaper during the past year has been very interesting and worthwhile. . . . I would say, keep up the good work."

Since the public is apparently interested in matters of health and of receiving the information which is disseminated through this means and since the newspapers are willing to cooperate in giving their space to such a project, it is my humble opinion that we are giving a worthwhile service.

Correspondence: Calls on this office for information and personal help in many ways are increasing monthly and such correspondence passing through the office of the Executive Secretary has increased appreciably during the past year. We are told often of collection agencies, equipment repair concerns, name listing agencies and many sales schemes which seek to operate in the state and who prey on the medical profession. These are checked through various contacts and we are able to give the individual a true and correct report of the standing and activities of the concern who has contacted him. This information is also given out to the profession through the medium of the Secretary's Bulletin which is issued from this office. This bulletin was originally sent only to county secretaries and to officers of the Association, since it carries much other information of general value to the profession, but since many societies do not meet regularly, and thus the information was of varying ages when it reached the individual, if at all, it was decided to make this a general bulletin and sent to every eligible physician in the state. The present plan is to confine this bulletin to members only after April 1, when all have had the opportuntiy of paying membership dues. By making it a general bulletin we have somewhat increased the expense, but we consider it to be of such value to all that the expense is justified. The bulletin has a two fold purpose, that of bringing general information of the Association business to the membership and of warning them against many companies and individuals whose business methods are not of the best type. Many individuals have undoubtedly been saved many times the cost of their membership by having this information.

This office also holds considerable correspondence with county secretaries and officials of the State Association regarding various organization and society matters, as well as in service rendered to the individual members. At the present time the individual correspondence is averaging about 500 pieces of mail per month, and with the bulletins and "Medical Facts" copy which is prepared and sent out there are now approximately twenty-four thousand pieces of mail going through the office in the course of a year.

Charters: Deeming it of great importance that each component society should be in possession of a charter of the parent organization, your Executive Secretary recommended in the report of January 1937 that a check be made of all societies and information obtained regarding this matter, and that duplicate charters should be issued to all societies not holding them at the present time. This same recommendation was made in the annual address of Dr. Fouts, and was adopted by the House of Delegates. As the result of such an investigation being made during the past sixty days your Executive Secretary has recommended thirty-five component societies to the secretary, Dr. Roy B. Adams, for issuance of a new charter. We still have ten societies to hear from before their individual cases may be disposed of definitely. The fact that so many societies have been found without a charter would indicate the importance of this activity for the past year.

Expenses: The following table gives a detailed account of the expenses of maintaining this office during the past year:

Mimeo Supplies (for bulletins, etc.,	$ 171.51
Oil Burning Stove (purchased new this year)	70.00
Heat (distillate)	48.69
Printing	181.25
Telephone and Telegraph	151.75
Postage	190.56
Misc. Expense (cartoons, cuts, mats, etc.)	102.86
Stenographer Salary	600.00
Travel Expense	1,104.63
Total	$2,621.25

You will note that there is no charge made for rent in this expense account. This is due to the fact that the office is located in a building owned by the Executive Secretary, and no charge is made for use of the space, which has a rental value of $30 per month.

During the past year your Executive Secretary has attended and addressed 31 county and district meetings, and also attended two meetings at the A. M. A. headquarters in Chicago. He has also been in attendance, upon invitation, at a number of meetings of the various committees whose activities covered a phase of work in which this office could be of assistance. In addition he has addressed two lay groups on the subject "Compulsory Health Insurance," a copy of one of the addresses having been published in the December issue of the Nebraska State Medical Journal.

In closing this report I wish to say that the work of the past year with the members of the official body and the individual members of this organization has been extremely interesting and pleasant and we wish to extend our appreciation to those who have so freely given their counsel and their time that our work might contribute at least in some small part to the advancement of organized medicine along a pathway of progress and achievement for the betterment of both the profession and the public.

Respectfully submitted,
M. C. Smith,
Executive Secretary, Nebraska
State Medical Association.

REPORT OF TUBERCULOSIS COMMITTEE

In our report of one year ago we stated certain objectives, which were approved by you and by the House of Delegates. These objectives remain the same and need not be repeated. Since that time this committee has been made a sub-committee of the committee on Medical and Public Health Education, but we, along with some other sub-committees, have been directed to act independently for the present, hence we are submitting a separate report. We wish, however, to indicate our complete willingness to enter into the large organization as soon as we are so directed.

The questionnaire survey which was still in progress at our last report has been completed and the non-confidential, or statistical, information is in the hands of the State Planning Board for tabulation and analysis. The confidential portion of the material is still in the office of the Executive Secretary where it will remain unless released by the doctor who originally furnished it.

The study of the tuberculosis deaths by counties over a ten-year period has been completed, and was presented in graphic form at the annual meeting last spring.

The York County survey has been completed, and the results have been published in mimeographed form. These reports are available on request to the committee. This project was successful beyond our expectations, and has fully justified our hope that the plan would prove to be a feasible one. It has attracted national attention, and seems likely to be used as a model in other parts of the country. Whether it will prove equally successful in other counties, who might have less well organized societies and less efficient presidents than Dr. Harry, remains to be seen.

On Nov. 30, 1937, the York County Medical Society sponsored a meeting which was called to form a permanent organization to carry on the work which had been started by the survey. Dr. Phillip Jacobs, of New York City, was present to represent the National Tuberculosis Association. Your committee, with the timely help of the officers of our society, was able to obtain Dr. W. W. Bauer to represent the American Medical Association. Dr. Bauer spoke at a dinner meeting to 150 persons from nineteen different counties, and also addressed a public meeting after the dinner. He made an excellent impression and upheld the prestige of the Association in a very satisfactory manner.

In his 1937 budget message Governor Cochran recommended an appropriation to aid other counties in carrying on this work. The legislature accordingly appropriated $15,000 for this purpose. The State Planning Board was designated as the official agency to administer the funds, as they were already carrying on several other surveys. The governor directed that this work be done in the same manner as in York county, that is, under the direction of the County Medical Society, and in cooperation with all other interested agencies. He particularly desired close cooperation with the State Department of Health. In accordance with this request Mr. A. C. Tilley, State Engineer and Chairman of the State Planning Board, appointed an advisory committee, with the following personnel:

Representing the State Medical Association	Dr. R. W. Fouts
	Dr. Geo. W. Covey
	Dr. E. W. Hancock
State Tuberculosis Association	Dr. John Allen
	Dr. Harry Murphy
	Miss Alice Marshell
State Department of Health	Dr. P. H. Bartholomew
Board of Control	Mr. C. W. Eubank
State Planning Board	Mr. W. H. Mengel

As Planning Engineer for the Planning Board, Mr. Mengel was given direct charge of the project. Dr. Hancock was appointed as Technical Advisor, and was elected chairman of the committee.

This committee has met, organized, and begun its work. A detailed plan of operation has been written and approved, and a tentative budget set up. Applications from several counties have been received and considered. Minutes of these meetings will be made available to the Council and officers if desired, but will not be given in detail in this report.

Mrs. Florence Zulauf, who was loaned by the Board of Control to York county, has been employed as Field Supervisor, and Mrs. Minnie Schaefer who also worked in the York County project will be the Field Nurse. These appointments will insure a continuation of former methods in field work.

Meetings in the interest of the State Survey have been held in Trenton, Hitchcock Co.; Benkelman, Dundy Co.; Kearney, Buffalo Co.; and Minden, Kearney Co. In each case a meeting with the physicians of the county preceded any public presentation. It is interesting to note that in two instances counties which previously had no organization saw fit to form one as a result of these meetings.

It is expected that from five to eight counties can be covered in the next eighteen months, the exact number depending on the size of the counties and the amount of local cooperation obtained. Your committee feels that the Nebraska State Medical Association is engaged in a pioneer effort for which few or no precedents exist. The experience so far indicates that the plan is a feasible one, and should be continued in some form until the entire state has been covered.

This has been a cooperative effort of many organizations and individuals. Separate acknowledgements are impossible. We wish to thank particularly Dr. Fouts, President, and Mr. Smith, Executive Secretary for their continuous and effective support.

Tuberculosis Committee,
E. W. Hancock, Chairman.

REPORT OF THE COMMITTEE ON PREVENTION AND AMELIORATION OF DEAFNESS

Your committee reports effort to promote greater activity among the medical profession and the laity in meeting the problem of better hearing.

Increased interest in this field of preventive medicine is indicated by the recent passage of effective legislation in New York and Pennsylvania making mandatory the testing of the hearing of all school children by the audiometer.

These laws also provide that children found to have hearing deficiencies be given educational readjustment and needed care by private physicians, or in case of the indigent, by public agencies.

Similar laws have been passed in Oklahoma and California. Legislation of the same order is under consideration in several other states.

It is the hope of your committee; that legislation requiring scientific hearing testing of all school children with the audiometer and proper care and education of children with significant hearing defects will be passed in Nebraska.

The committee on Prevention and Amelioration of Deafness would welcome a conference with the Legislative Committee of the State Society to prepare such a bill for the next meeting of the State Legislature.

From an economic standpoint it has been found that hard of hearing school children have three times as many school failures as all other children.

With a proper program for these children these failures can be cut in half which means a big saving to the school system, and the increased adult earning power of these children saved from deafness is immeasurable.

This program is being carried out in Omaha.

Members of your committee have made several addresses before the medical and educational groups on subjects related to deafness prevention although we are not eligible to take part in the refresher courses under the present set up.

The director of Mother and Child Health for the State has shown interest in our plan and considers it a worth while piece of preventive medicine.

Respectfully submitted,
Dr. J. J. Hompes,
Dr. E. E. Koebbe,
Dr. Claude T. Uren, Chm.

STUDENT LOAN FUND REPORT

1937

DEBITS

Jan. 1, 1937—Cash on hand	$305.75
Feb. 1, 1937—Int. on No. 10	3.00
Feb. 1, 1937—Int. on No. 6	24.00
Feb. 12, 1937—Loan No. 11	3.00
Feb. 19, 1937—Int. on No. 9	12.00
Mar. 8, 1937—Loan No. 11	3.00
Apr. 9, 1937—Int. on No. 3	20.00
Apr. 13, 1937—Loan No. 11	3.00
May 5, 1937—Loan No. 3	20.00
May 10, 1937—Loan No. 1	20.00
May 24, 1937—Loan No. 11	3.00
June 4, 1937—Loan No. 3	20.00
June 23, 1937—Loan No. 2	10.00
July 9, 1937—Loan No. 3	20.00
Aug. 7, 1937—Loan No. 3	20.00
Sept. 9, 1937—Loan No. 11	10.00
Sept. 18, 1937—Nebraska State Medical Aux.	100.00
Sept. 27, 1937—Loan No. 11	15.00
Oct. 5, 1937—Loan No. 3	20.00
Oct. 14, 1937—Loan No. 11	12.50
Oct. 27, 1937—Loan No. 6	45.00
Nov. 3, 1937—Loan No. 3	20.00
Dec. 3, 1937—Loan No. 3	20.00
	$729.25

DISBURSEMENTS

Feb. 1, 1937—Loan No. 10	100.00
Feb. 1, 1937—Loan No. 12	100.00
Oct. 1, 1937—Loan No. 12	100.00
Oct. 1, 1937—Loan No. 13	100.00
Oct. 12, 1937—Loan No. 14	100.00
Nov. 4, 1937—Expense on No. 2	12.00
Dec. 31, 1937—Cash on hand	$217.25

SUMMARY OF NOTES WITH INTEREST

Student No. 1—Note and Interest	$ 97.00
Student No. 2—Note and Interest	380.00
Student No. 3—Note and Interest	82.00
Student No. 6—Note and Interest	367.00
Student No. 7—Note and Interest	312.00
Student No. 8—Note and Interest	212.00
Student No. 9—Note and Interest	200.00
Student No. 10—Note and Interest	306.00
Student No. 12—Note	200.00
Student No. 13—Note	100.00
Student No. 14—Note	100.00

A. P. Overgaard, Secretary,
Student Loan Fund Committee.

REPORT OF STATE CANCER COMMITTEE

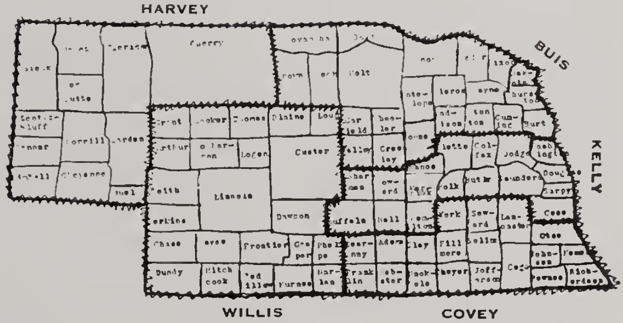
JANUARY 17, 1938

Due to lack of funds to carry on the usual transportation of mail and films as well as other data to members of the State Medical Society, in various parts of the state, it has been necessary this year to curtail the activities of the Cancer Committee. Funds have been requested in each previous annual report, but no funds have been made available.

Both of the film projectors which the Chairman has been loaning to speakers have been smashed up in transit and as there are no funds available to repair them they will remain out of commission until such funds are available. One of these projectors was borrowed by the Chairman and will probably be replaced at the Chairman's expense. The other projector belongs to the American Society for the Control of Cancer and was loaned to the Chairman for use in Nebraska.

In order to allow closer cooperation it has been deemed advisable to divide the state into five sections. Each section will be supervised, to a great extent, by the member of the State Cancer Committee living in that section. Due to the numerous requests for cancer speakers in various parts of the state it was thought best that each committee member living in the district where the speaker was requested could advise and guide such activities since he knew the local situation best.

The same policy previously followed by the Cancer Committee is still in affect, namely, that when requests are made for speakers on cancer, particularly by the women's groups, a speaker from the town in which the meeting is to be held is to be arranged for if any member of the State Society will be good enough to make the address. If no one in the town is willing then someone must be supplied by the member of the State Cancer Committee in that district, preferably from some town at a distance and someone with some cancer experience. In no instance has a meeting gone without a speaker and the committee feels sure that the requests from the Women's Field Army for the American Society for the Control of Cancer can be filled by men experienced in cancer work. Up to this time the Cancer Committee has had excellent cooperation from the practitioners of the State.



The Committee wishes to thank those who have assisted them in carrying on their work.

Again a request is made for a small appropriation to cover certain essential expenses.

Respectfully submitted,

James F. Kelly, M. D., Chairman
State Cancer Committee.

SPRING MEDICO-MILITARY SYMPOSIUM

The Annual Spring Medico-Military Symposium, sponsored by the Kansas City Southwest Clinical Society in conjunction with the Seventh Corps Area will be held at the Kansas City General Hospital, Kansas City, Missouri, March 28, 29, 1938. This is a meeting devoted to medical subjects of military interest to which the entire medical profession is invited.

The medical reserve officer will gather information which will be of value in event of war, a not impossible eventuality, and much that will be of value in his practice as well as receive credits which will apply on his advancement.

Guest speakers will be Dr. J. Albert Key, professor of clinical orthopedic surgery, Washington University School of Medicine, St. Louis, and Dr. Orvid O. Meyer, professor of medicine, University of Wisconsin School of Medicine, Madison.

The Kansas City Southwest Clinical Society invites the physicians of the Southwest to reserve March 28th and 29th to attend this meeting.

ANNOUNCEMENTS

SCIENTIFIC EXHIBITS

Exhibits for the scientific section at the Annual Session in April are desired. We would like to reach the doctors of the state with an invitation to enter exhibits. Reservations should be made as soon as possible with information relative to the nature of the exhibit, floor space required and whether or not electrical connections are needed.

—Paul Bancroft, 724 Sharp Bldg., Lincoln.

DR. C. C. LITTLE TO SPEAK IN OMAHA

Dr. C. C. Little of New York, President of the American Society for the Control of Cancer, and former president of the University of Michigan, will speak in Omaha on March 10, at the Medical Arts Auditorium, at 7:30 to 9:00 on "The Cancer Problem."

ALUMNI AWARD

"The University of Nebraska College of Medicine, Alumni Association announces an annual award of $50.00 to the prize winning Senior Thesis of the College of Medicine, this award to be given by the Senior Comprehensive Examination Committee of the Faculty of the College of Medicine, each Spring."

POSTGRADUATE INSTITUTE OF THE PHILADELPHIA COUNTY MEDICAL SOCIETY

The Third Annual Postgraduate Institute, offering an intensive and interesting study of the Diseases of the Digestive Tract, will be conducted by The Philadelphia County Medical Society from March 28 to April 1 inclusive.

The program to be held in the Bellevue-Stratford Hotel, Philadelphia, has been designed to meet the needs of all members of the profession, but particularly those in general practice.

Physicians from fourteen States having attended last year's institute, an invitation to attend the 1938 session has been extended to the members of all County Societies.

Lecturers, 73 in number, have been selected from among the foremost teachers in this great medical center. While approaching the subject from specialized viewpoints, the presentations will be of a strictly practical nature and of real value to the general practitioner, who finds digestive conditions occupy a considerable portion of his time.

The Philadelphia County Medical Society, in conducting the Postgraduate Institute, is meeting the demands of many physicians who believe that the organized profession should provide them with this type of opportunity for keeping abreast of medical progress, and thus maintaining the highest standards of medical service.

The only charge is a $5.00 registration fee to cover the Institute's expenses.

Additional information may be secured from your County Society or from The Philadelphia County Medical Society, 21st and Spruce Streets, Philadelphia, Pa.

NEUROPSYCHIATRY CLINIC

The medical staff of the Menninger Clinic will conduct its fourth annual Postgraduate Course on Neuropsychiatry in General Practice, April 25 to 30, inclusive, at the Menninger Clinic, Topeka, Kansas. The course this year will include a brief introduction to the fields of neurology and psychiatry and a specific application of this knowledge to the large group of cases of psychoneuroses, psychoses and psychogenic and neurological disorders which every physician meets in his daily practice. Suggestions made by those who took the course last year have been embodied in this year's program in order to make it applicable to the most common practical problems of the physician.

As in previous years, several guest speakers, prominent in the fields of neurology and psychiatry, will appear at the evening sessions of the course.

AMERICAN BOARD OF OPHTHALMOLOGY

The American Board of Ophthalmology announces that in 1938 it will hold examinations in San Francisco, June 13th. during the American Medical Association; Washington, D. C., Oct. 8th, during the American Academy of O. and O. L.; Oklahoma City, Nov. 14th, during the Southern Medical Association.

Up to the end of 1937, the Board has held fifty-six examinations and had certfied 1,498 ophthalmologists. The Board on January 1st, 1938, issued a new and complete list of physicians certificated to date, arranged geographically. This list was mailed gratis to all certificated persons and to over two hundred and fifty hositals and institutions.

The American Board of Ophthalmology has established a Preparatory Group of prospective candidates for its certificate. The purpose of this Group is to furnish such information and advice to physicians who are studying or about to study ophthalmology as may render them acceptable for examination and certification after they have fulfilled the necessary requirements. Any graduate or undergraduate of an approved medical school may make application for membership in this Group. Upon acceptance of the applciation, information will be sent concerning the ethical and educational requirements, and advice to members of the Group will be available through preceptors who are members or associates of the Board. Members of the Group will be required to submit annually a summarized record of their activities.

The fee for membership in the Preparatory Group is ten dollars, but this amount will be deducted from the fifty dollars ultimately required of every candidate for examination and certification. For sufficient reason, a member of the Preparatory Group may be dropped by vote of the Board.

In future issues of the directory of the American Medical Association certificated ophthalmologists will be so designated in their listing.

Important: Applications should be filed immediately. Required number of case reports must be filed at least sixty days prior to date of examination. Application blanks can be procured from Dr. John Green, 3720 Washington Ave., St. Louis, Mo.

NEWS AND VIEWS

Dr. James Maxwell of Omaha is the author of a text book entitled "An Outline of Occular Refraction," published by the Medical Publishing Co. of Omaha.

Dr. Ralph Luikart has modified the Kielland, Simpson, and Tucker-McLane Forceps to simplify their use and improve function and safety. The new forceps are manufactured by Sklar & Co. of Brooklyn, N. Y.

Dr. B. F. Bailey, for some years president of the Lincoln Council of Social Agencies, was honored on January 20 in Lincoln. Dr. Bailey was presented with a scroll in appreciation for service to the Agency.

The Dodge County Medical Society approved a plan for establishing a respirator fund in Fremont.

Dr. J. F. Stibal was elected to serve as school physician in Gibbon, Nebr.

The General Hospital of Grand Island has been purchased by the Lutheran Good Samaritan Society. The name of the hospital hereafter will be the Lutheran Hospital.

A new wing to the psychopathic hospital at Hastings at a cost of $363,000.00 was allowed. The structure will soon be in the process of construction.

Dr. W. H. Betz of Bellevue was honored recently by the Bellevue Junior Woman's Club. This club presented a portrait of Dr. Betz to be hung at the Bellevue Public School.

Dr. J. Warren Bell, who has for some time been in charge of the maternal and child welfare program in Nebraska under the auspices of the State Department of Health, is no longer connected with the State Health Department.

SOCIETIES

Lancaster County Medical Society

January 18, 1938

The regular meeting of the Lancaster County Medical Society was held in the society rooms on the above date, with fifty members present. The meeting was called to order by the President, Dr. C. F. Andrews.

A clinical case of very marked congenital cretinism in a girl of ten years, was reported by Dr. E. W. Hancock.

The first paper of the evening, "Low Back Pain" was read by Dr. W. W. Carveth. The discussion was opened by Dr. H. W. Orr, who presented a patient 35 years of age, whom he had treated for 13 years with an ultimate cure. Further discussion followed by Drs. A. D. Munger, H. S. Morgan, C. C. Hickman, J. C. Thompson, Paul Black, G. W. Covey, C. F. Andrews, and Ruth Warner, each stressing different causes. Dr. B. A. Finkle capped these discussions by mentioning the malingerer.

"Surgical Treatment of Hypertension" was the second paper presented by Dr. Roy H. Whitham. This paper was discussed by Drs. O. A. Reinhard, O. V. Calhoun, H. E. Flansburg and H. B. Morton. The discussion by Drs. G. W. Covey and J. C. Thompson was quite laudatory.

Dr. J. J. Hompes, our representative to the State Councilors' meetings, reported on a recent meeting. State membership is now about 77 per cent.

Mr. M. C. Smith, our Executive Secretary, was present and spoke a few words. He informed us that a new Constitution and By-laws is now being drawn up.

Regular Meeting Lancaster County Medical Society

Tuesday, February 1, 1938

Sharp Building

7:30 P. M.

The usual order of business was abolished and after calling the meeting to order Dr. C. F. Andrews introduced the first guest speaker of the evening who was Dr. Edw. H. Hashinger. There were about sixty members present.

Dr. Hashinger spoke on "Various Phases of Obesity with Particular Emphasis on Endocrine Therapy." He feels that we are all the victims of the activities of our glands and all obesity is largely caused by an endogenous factor. In the anterior pituitary gland there is a metabolizing factor that seems to be a specific for obesity. He showed many illustrations of cases of obesity and in a summary of twenty-five cases had an average loss of three and four-tenths pounds per week on treatment with anterior pituitary liquid.

The second guest speaker was Dr. Ferdinand C. Helwig, also of the University of Kansas Medical School, who spoke on "The Diagnosis and Therapeutic Importance of Endocrine Activity in Neoplastic Disease." Dr. Helwig gave a very interesting talk on tumors where the type cell was glandular. He said that estrin may produce mastitis in mice. Pregnancy and lactation increases the occurring of cancer of the breast and irradiation or castration reduces incidence. He leaves a doubt as to the safety of estrin therapy in menopausal conditions.

Both of these papers were beautifully presented and well received.

—E. E. Angle, M. D.

Omaha-Douglas County Medical Society

The regular meeting of the Omaha-Douglas County Medical Society was called to order by President Wearne on Tuesday, January 11, 8:00 p. m., at the Medical Arts Auditorium.

The minutes of the regular meeting December 14, and the Council meeting of January 11 were read and approved.

It was moved and seconded that Dr. Gordon Whiston, who had been endorsed for membership to the Society by the Council, be elected. It was also moved and seconded that Dr. Fred M. Watke be reinstated as a member of the Society.

Drs. J. C. Sharpe and C. J. Baker opened the scientific program with a case report on "A New Disease."

Dr. M. E. Grier's subject, "The Treatment of Benign Lesions of the Cervix," was discussed by Dr. Ralph Luikart; Dr. L. O. Hoffman, who was also scheduled to take part in the discussion, was not present. There was further discussion from the floor by Drs. R. J. Stearns, M. C. Howard and Charles Moon.

The guest speaker, Dr. Alexis F. Hartmann, professor of pediatrics, Washington University, St. Louis, Mo., was introduced by Dr. J. A. Henske. His subject was "Therapeutic Uses of Sodium r-Lactate." Discussion from the floor by Dr. W. J. Nolan and Dr. M. C. Howard.

Meeting adjourned at 10:15 p. m.

—H. M. Jahr, Sec'y-Treas.

Omaha-Douglas County Medical Society

The regular meeting of the Omaha-Douglas County Medical Society was held on Tuesday, January 25, at 8:00 p. m., at the Medical Arts Auditorium, President Wearne presiding.

The minutes of the regular meeting of January 11, and of a special meeting of the Council on January 18, were read and approved.

At the request of the local Committee to Fight Infantile Paralysis, an announcement was made by Dr. R. D. Schrock in behalf of the Infantile Paralysis Foundation.

The case report by Dr. A. F. Tyler and Dr. T. O. Winship on "Extensive Hemangiomas Involving Bones and Soft Parts," opened the scientific program. This was further discussed by Dr. R. D. Schrock.

Dr. E. C. Sage's paper on "The Interrelationship of Hormones and Uterine Bleeding" was discussed by Drs. C. P. Baker and Clarence S. Moran.

Dr. Adolph Sachs closed the scientific program with a report on "Copper and Iron in Human Blood." This was discussed by Dr. C. M. Wilhelmj, Dr. C. B. Russum, Dr. M. C. Howard and Dr. H. M. Jahr. Meeting adjourned at 10:00 p. m.

—H. M. Jahr, Sec'y-Treas.

The annual election of officers of the **Tri-County Medical Society** (Hall-Howard-Merrick) was held December 16, 1937, following a dinner with the Women's Auxiliary in the Stratton Hotel, Grand Island, Nebraska. Dr. E. E. Farnsworth was elected President, succeeding Doctor A. D. Brown of Central City. Dr. William McGrath was made Secretary and Treasurer.

On January 27, 1938, a well attended meeting of the **Tri-County Medical Society** was held at the St. Francis Hospital, Grand Island, Nebraska. Following the regular dinner, Dr. H. B. Hamilton of the Pediatrics Department of the University of Nebraska discussed "Diseases of the Chest in Childhood;" Dr. Howard Royer of Grand Island gave an excellent paper on Acrodynia and discussed a case recently under his observation.

Meetings of the Tri-County Medical Society are held on the last Thursday of each month, unless otherwise arranged. All doctors in the State are cordially invited to attend.

The **Sixth Councilor District** met Feb. 14, 1938, at the Aurora Hotel. Program: Review of Dr. Karl Menninger's book, Man Against Himself, Dr. Douglas Orr, Topeka, Kansas; Lantern Slides on Hospital Care in England and British Isles, Dr. H. W. Orr, Lincoln, Nebr.

The **Madison Six County Medical Society** met at the Oxnard Hotel, Norfolk, on January 18th. The following program was presented: Dr. Warren Thompson, Diagnosis of Heart Disease and Dr. J. D. McCarthy, Treatment of Heart Disease. Arrangements were made by Dr. Lucien Stark and Dr. A. E. Gadbois.

The **Colfax County Medical Society** met at Schuyler January 14. Dr. W. H. Fritz was elected president, Dr. Kavan of Clarkson, secretary-treasurer.

The **Third Councillor District** met at Pawnee City Tuesday, January 25. The afternoon session began at 2:30 and the evening session at 7:30. The progrom follows: The Diarrheas, by Dr. Raymond L. Traynor; The Use of Sulphanilimide in Urinary Tract Infections, Dr. William J. McMartin, of Omaha; The Management of Occiputo-Posterior Presentation, Dr. Frank P. Murphy, Omaha; fracture clinic and demonstration by Dr. Herman F. Johnson and Dr. James William Martin, Omaha.

The **Richardson County Medical Society** held a joint dinner with its auxiliary. There was a general discussion on a federal and state health unit for Richardson, Nemaha, Pawnee and Johnson counties by Drs. W. H. Boyer, of Pawnee City, and Dr. J. Googe of the State Health Department at Lincoln.

The **Southwest Medical Society** met February 12 at the Keystone Hotel in McCook. The program follows: Dr. Herbert M. Davis, Omaha, Endocrinology Related to Physiology; Dr. F. Lowell Dunn, Treatment of Arthritis; Dr. A. E. Bennett, Omaha, Prevention of Neurosyphilis.

The **Lincoln County Medical Society** met at the Pawnee hotel in North Platte. Dr. P. H. Bartholomew, director of health, state of Nebraska, outlined a prospective health unit for the county. Dr. H. L. Clarke of North Platte presented clinical cases.

The **Dawson County Medical Society** held its annual meeting at Gothenburg recently. Dr. John Fochtman of Cozad was elected president, Dr. V. D. Norall, Lexington, vice-president, and Dr. Bernard Harvey of Gothenburg, secretary-treasurer. Dr. A. W. Anderson of Lexington was elected delegate to the state medical convention.

The **Adams County Medical Society** met in regular session February 2nd at Ingleside State Hospital preceded by a fine dinner.

Attendance showed an increase due to the fact that both the Medical Society and the Auxiliary decided to hold a meeting coincidently in the form of dinner meetings. Each group having their business meetings separately.

The speaker of the evening was Dr. J. C. Thompson of Lincoln who spoke on the glands of internal secretion. The paper was very well received and considerable discussion carried on. Thirty members and visitors were in attendance at the business meeting.

The Auxiliary met with Mrs. J. C. Nielsen as hostess and were entertained with a review of the book "Heads and Tales by Melvina Hoffman," given by Mrs. W. L. Shaw.

This is the first meeting of this sort and if the expression of various opinions is any indication, it will probably be continued in the future with profit to both organizations.

—W. L. Shaw, M. D., Secretary.

AUXILIARY NEWS

The woman's Auxiliary to the Omaha-Douglas County Medical Society met for luncheon, program, and business meeting at the Medical Arts Tea Room, Jan. 18, 1938. Twenty-one members were present to discuss the projects for the coming year.

Dr. Floyd S. Clark spoke briefly on the need for a Serum Center in Omaha. A report of the work carried on last year in the fight with poliomyelitis was given. The Auxiliary agreed to sponsor the work.

Twenty-five dollars was pledged to the Conservation of Hearing project being carried on in the grade schools. Also twenty-five dollars was given to the School Lunch and Milk Fund.

Mrs. Herman Johnson was appointed State Chairman for the Summer Round-Up.

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The Auxiliary Board to the Nebraska State Medical Association met at the Hotel Cornhusker, Lincoln, January 14, 1938, Mrs. Earl E. Farnsworth presiding. Reports given by chairmen of committees and Presidents of the County Auxiliaries evidenced an increase in activities and accomplishments.

Luncheon was served in the Chinese room following which a meeting of the State convention committee was held. The committee being: Chairmen: Mrs. Allan Campbell, Lincoln; Mrs. E. E. Farnsworth, Grand Island; Mrs. A. D. Brown, Central City; Mrs. C. W. Pollard, Omaha; Mrs. James MacWoodward, Lincoln; Mrs. J. E. M. Thomson, Lincoln; Mrs. Harry Flansburg, Lincoln; Mrs. Marshall Neeley, Lincoln; Mrs. Harold Morgan, Lincoln.

An illustrated talk on "Morrill Hall Comes to Life," given by Miss Marjorie Shanafelt, of Nebraska University, was enjoyed by members of the Women's Auxiliary to the Tri-County Medical Society, following a dinner at the home of Mrs. Earl E. Farnsworth, 1504 West First street, Thursday evening. Miss Shanafelt proved an intensely interesting speaker and points were stressed through use of lantern slides run by Mr. Bell, of Nebraska University Museum. Mrs. Howard Royer presided during the business session. Mrs. Hallman, of Aurora, Illinois, mother of Mrs. W. W. Arrasmith, was a guest.

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A board meeting was held on February 7th, at the home of Mrs. Everett Angle and was followed by a sandwich-coffee luncheon for the Lancaster County Auxiliary, which was attended by about forty-five. At the business meeting, plans for the convention were discussed, and committees announced. Mrs. Harry Flansburg asked for opinions and ideas on the suggestion to have, instead of a hobby room, a room devoted to old medical objects. Mrs. R. C. Olney told of the slow, but steady, progress which is being made by the organization for better films in Lincoln.

The speaker, Dr. I. C. Junger, Jr., had as his subject, "The Evolution of Surgery," which proved to be very interesting.

—Mrs. C. Fred Ferciot, Press and Publicity.

WOMAN'S AUXILIARY TO THE NEBRASKA STATE MEDICAL ASSOCIATION

As our year draws to a close I realize I have not been able to contact all of you to personally invite you to renew your memberships and to enjoy the charm of fellowship which permeates our annual meetings. Our fiscal year closes March 31st, and unless the State Treasurer, Mrs. Elmer Hansen, 2425 South St., Lincoln, has received your dues by that date you are not a member. We are making a special effort to enlarge our membership and we invite the wife of every doctor who is affiliated with the Nebraska State Medical Ascsociation to be a member of the Auxiliary and to attend the annual meeting.

I am giving a prize to the president of the County Auxiliary having the largest percentage of eligible members in proportion to the membership of the County Medical Society.

The Annual Convention will be held at the Cornhusker Hotel in Lincoln, April 26th, 27th, and 28th. Plan to attend and enjoy the meetings with us. Your convention committee is arranging an interesting and entertaining program. We urge you to come and meet your old friends and greet many new ones.

—Mrs. Earl E. Farnsworth,
State President of Woman's Auxiliary
Nebraska State Medical Association.

LIVELY INTEREST IN PHYSICIANS' TOUR OF AMERICA BY DELUXE SPECIAL TRAINS ENROUTE TO THE A. M. A. CONVENTION IN SAN FRANCISCO

According to latest reports reaching us, physicians and their families are evincing a very keen interest in the arrangements made by the American Express Travel Service with the cooperation of your society to see America enroute to and returning from the San Francisco Convention. This early interest indicates the assured success of this important Convention.

The "See America" movement by DeLuxe Special Trains is endorsed by approximately twenty-five State Medical Societies.

Many physicians, completely immersed in their practices, have hesitated to take such an extended vacation heretofore but now the fact of the A. M. A. Convention and the attractiveness and economical features of this travel program has brought such a trip within the realm of desirable possibilities.

Picture the beauty and relaxation of such scenes as the Indian Detour in New Mexico, the Grand Canyon of Arizona, Los Angeles and the beauties of southern California, Santa Catalina Island, the famous Columbia River Highway in Oregon, Seattle, Washington, Victoria, Vancouver, Lake Louise and Banff in the Canadian Rockies, Yellowstone National Park, Colorado Springs and many others.

The all-inclusive price is unusually low because of the cooperation of so many important medical societies. It is, therefore, recommended that our members avail themselves of this most attractive and unusual program which may not again present itself for some time. An attractive folder, describing these travel arrangements, may be obtained through the Secretary's office or the Transportation Agents, The American Express Travel Service, 907 Walnut Street, Kansas City, Missouri.

HUMAN INTEREST TALES

Dr. and Mrs. C. E. Abbott of Minden are touring in Mexico.

Dr. and Mrs. A. C. Stokes of Omaha are visiting in Texas.

Dr. Robert T. Jones, of Fullerton, Nebr., has moved his practice to McCook.

Dr. C. P. Fordyce of Falls City is practicing ophthalmology in St. Joseph, Mo.

Dr. R. A. Steinauer of Alexandria spent a week in Denver, Colo., on a business trip.

Dr. and Mrs. B. H. Grimm, formerly of Ft. Collins, Colorado, have moved to Sidney, Nebr.

Dr. R. R. Brady is City Physician of Ainsworth, succeeding Dr. T. J. Lawson, deceased.

Dr. G. Alexander Young recently returned to Omaha after a month's vacation in Honolulu.

Dr. and Mrs. George Walker of Lincoln have returned from a trip to Miami Beach, Fla.

Dr. Edward A. Holyoke of Omaha has been appointed first lieutenant in the medical reserve.

Dr. A. E. Stuart of Cedar Bluffs has been re-appointed County Physician of Saunders County.

Dr. and Mrs. A. E. Gadbois have returned to Norfolk after spending several weeks in California.

Dr. G. W. Dishong addressed the Omaha Philosophical society on Adjustment Problems in a Changing World.

Dr. E. S. Wegner, Lincoln, addressed the Falls City Rotary Club on the History and Development of Medicine.

Dr. W. C. Kenner is now medical consultant at the school for blind, Nebraska City, succeeding Dr. D. D. Stonecypher.

Dr. R. H. Loder has terminated his practice of medicine at Magnet to take special training at Ann Arbor, Mich.

Dr. and Mrs. F. W. Niehaus and Dr. and Mrs. Charles F. Moon of Omaha spent a week at the Elms Hotel in Excelsior Springs.

Dr. H. R. Miner, Falls City, recently addressed members of the local National Guard on military hygiene and camp sanitation.

Dr. Herald A. Fenner of North Platte was the guest speaker at the anniversary banquet of Dr. Lamb's Hospital, Denver, on February 11.

Dr. Chester Waters, Jr., has received an appointment for training in orthopedic surgery at Duke University, Durham, N. C., for three years.

Dr. Lucien Stark of Norfolk spoke on Mechanics of the Heart and Causes of Heart Disease at a meeting of the C. & N. W. Men's Club recently.

Dr. H. M. Hepperlen of Beatrice gave general instructions to the first meeting of the Red Cross first aid class of the Y. M. C. A. on February 10.

Dr. Frank W. Scott of the Veterans Hospital in Lincoln has been transferred to the regional office of the Veterans Administration at Reno, Nev.

Dr. Harry Clements, now serving as physician and surgeon for the government at Rangle, Alaska, is visiting at his former home in Elmwood, Nebr.

Dr. Ernest Kelley of Omaha recently lectured at the Hastings junior high school on venereal disease. The talk was sponsored by the League of Voters.

Dr. John Baptist of Omaha, who is a native Armenian, spoke on Turkey to members of the Young Business Men's association at Hotel Rome on February 10.

Dr. James W. Martin, formerly assistant superintendent of the Douglas County Hospital, Omaha, resigned his position to take up private practice in Holstein, Iowa.

Illustrating with motion pictures, Dr. Olga Stastny spoke on the subject, Safeguarding Health Through Knowledge, before Omaha members of the American Home Department on February 17.

Kappa Mu Lambda, Omaha University music fraternity, sponsored an address by Dr. G. L. Sandritter of the Norfolk State Hospital, on The Use of Music in the Treatment of Medical Cases.

A portrait of Dr. H. W. Orr, of Lincoln, painted by Zanna Anderson, is now at the library of the American College of Surgeons in Chicago. It will remain there a month before taking it to New York City for exhibition.

Dr. Henry Ware Walters of Nehawka received a government appointment to work with disabled war veterans in Mississippi. Dr. R. R. Anderson of Union has purchased the professional interests of Dr. Walters, and will maintain an office at each place.

MARRIAGES

Dr. H. D. Kuper of Kenesaw and Miss Marie Bay, formerly supervisor at the Omaha Methodist Hospital, were married in January. Miss Mildred Pierce and Dr. Maurice Frasier of Omaha were attendants. Their home will be in Kenesaw, where Dr. Kuper is practicing with Dr. C. Wayne Guildner.

Miss Betty Fellman and Dr. A. C. Fellman of Omaha will be married on February 27th. Dr. Fellman is an instructor in the Creighton University school of medicine.

Dr. Leigh G. Collins, son of Dr. and Mrs. G. J. Collins, West Point, and Miss De Line Hettrick were married at Lincoln recently. The couple will reside in Omaha until Dr. Collins finishes his internship at St. Joseph's hospital in June.

BIRTHS

A daughter was born to Dr. and Mrs. Clyde Parker of Bruning on February 4.

Dr. and Mrs. Douglas D. Dickson of Rochester, Minn., formerly of Lincoln, announce the birth of a son on January 20.

OBITUARIES

Dr. C. A. Reynolds, Lincoln; born 1880, graduate Nebraska College of Medicine 1908, practicing since 1908, died January 21, 1938.

Dr. S. S. Bamford, Cleo, Iowa; one time resident of Hastings, born 1859, graduate University of Iowa 1889, died January 1, 1938.

Dr. Glenn W. Briggs, Walthill; born 1890, graduate Creighton Medical School 1914, formerly practiced in South Omaha, was found dead February 4, 1938.

Dr. I. L. Smith, Syracuse, graduate of University of Kentucky 1890, came to Nebraska in 1891, died February 11, 1938.

Dr. J. T. Lawson, Ainsworth, born in Toronto 1862, graduate of Omaha Medical College in 1896; located in Nebraska in 1909; died January 26, 1938.

Dr. A. B. Moss, (colored) Lincoln, born 1883, graduate of Jenner Medical College 1908, located in Nebraska 1909, died January 29, 1938.

DR. FRANK WAY

Dr. Frank Way, Wahoo, born in Springfield, Vt., 1868, graduate Boston University Medical College 1890; located in Nebraska in 1891 and past president of Saunders County Medical Society, died February 7, 1938.

TUBERCULOSIS ABSTRACTS

THE EFFECT OF CONTAGIOUS DISEASES ON TUBERCULOSIS

Several writers state that during an attack of measles the tuberculin test becomes negative. Some assert that intercurrent infections, particularly measles, stimulate activity in many cases of tuberculosis. In one series of 37 cases of tuberculous children who developed measles, the tuberculin test done by the Pirquet method showed that the reaction became negative in all at the appearance of the eruption, but became positive again in half of them by the seventh day. Other writers express different views. Chadwick, for example, found that a group of tuberculous children who reacted positively to tuberculin showed no change roentgenologically and no change in their tuberculin reactions during and after measles. Berghoff studied 596 cases of measles in the army and found only one case of frank active tuberculosis following directly after a measles infection.

Effects of Contagious Diseases Exaggerated

Scattered studies made in Europe to determine the effect of whooping cough, chickenpox, scarlet fever and measles on the tuberculin reaction, and on active tuberculous lesions, indicate that the effect of the contagious diseases on tuberculosis has been exaggerated and may be very doubtful. This supports the findings of the author in a study made at the William H. Maybury Sanatorium, which included 43 children with measles, 39 with chickenpox, 16 with whooping cough, 13 with scarlet fever, 30 with mumps and 6 with diphtheria, making a total of 147 cases of acute infectious disease in a group of 118 children convalescing from pulmonary tuberculosis of the childhood-type. The ages of the children ranged from 6 months to 15 years. All had X-ray examinations of the chest a short time before the onset of the contagious disease and directly after the expiration of the quarantine period. Eighty-three of the 118 children had active pulmonary tuberculosis of the childhood-type; the remaining 35 had quiescent or apparently arrested disease.

In 4 of the 43 cases of measles the intracutaneous tuberculin test with Old Tuberculin became negative to a dose to which they were positive before, but were again positive two weeks after the disappearance of the eruption. Six cases, showed by roentgenological examination, an increase in the preexisting tuberculous process but none of these occurred in less than one month after the measles. In each instance the exacerbation of the tuberculosis was an evanescent occurrence and all recovered in a few months.

Two of the 16 children with whooping cough showed exacerbation of the tuberculous disease. In one case this occurred during the course of whooping cough but subsided promptly. Three of the cases of chickenpox experienced extensions of their tuberculous lesions: none of them showed any change in the tuberculin reaction. Of the 25 children with mumps, 24 were positive to tuberculin before and after the disease. However, a change in the type of the reaction was noticed in several. None of the mumps patients showed reactivation or exacerbation of their tuberculosis.

Of the 13 cases with scarlet fever, only one showed a spread of the tuberculous process. None of the 6 cases of diphtheria experienced any ill effects so far as their tuberculosis was concerned. The children with scarlet fever and diphtheria were not tested with tuberculin.

In the discussion, the author points out that only 12 children of the 118 showed any increase in the tuberculous lesions during convalescence. This closely parallels the experience of similar groups of patients whose tuberculosis was not complicated by acute contagious diseases. In the great majority of those who showed increase in tuberculosis, the extension occurred several weeks after the intercurrent disease had subsided. None of these remissions occurred in quiescent or apparently arrested lesions showing that the old foci were not disturbed by the intercurrent contagious disease. The remissions seen in the active tuberculous lesions could be safely considered coincidental and unrelated to the contagious disease.

Very little evidence was found to support the contention that measles or any of the other contagious infections have a depressing effect on the body's capacity to react to tuberculin. In the majority of previous studies the Pirquet method was employed for giving the tuberculin test. This may explain the apparent discrepancy, because the Mantoux test which is more precise, was used in all of the author's cases.

CONTACT COMMITTE FOR MATERNAL AND CHILD HEALTH

Appointed by President Roy Fouts

DISTRICT 2

Lancaster	Dr. H. S. Morgan, Lincoln
Cass	Dr. O. E. Liston, Elmwood
Otoe	Dr. John Gilligan, Nebraska City

DISTRICT 3

Gage	Dr. H. M. Hepperlen, Beatrice
Johnson	Dr. K. E. Prescott, Tecumseh
Nemaha	Dr. Isaac W. Irvin, Auburn
Richardson	Dr. Harlan S. Heim, Humboldt
Pawnee	Dr. A. B. Anderson, Pawnee City

DISTRICT 4

Madison	Dr. G. B. Salter, Norfolk
Pierce	Dr. W. I. Devers, Pierce
Stanton	R. A. Frary, Stanton
Antelope	Dr. E. E. Curtis, Neligh
Cuming	Dr. H. W. Francis, Bancroft
Knox	Dr. C. R. Green, Niobrara
Cedar	Dr. F. G. Dewey, Coleridge
Dakota	Dr. C. W. Neill, South Sioux City
Wayne	Dr. Walter Benthack, Wayne
Thurston	Dr. John Buis, Pender
Dixon	Dr. L. J. Kilian, Wakefield

DISTRICT 5

	Dr. Andrew Harvey, Fremont
	Dr. W. R. Neumarker, Columbus

(Dr. Davis thought two sufficient for his district).

DISTRICT 6

York	Dr. R. E. Harry, York
Seward	Dr. Wm. Sandusky, Seward
Butler	Dr. L. E. Ragan, David City
Hamilton	Dr. J. M. Woodward, Aurora
Polk	Dr. H. S. Eklund, Osceola
Saunders	Dr. C. W. Way, Wahoo

DISTRICT 7

Clay	Dr. Henry H. Seely, Harvard
Fillmore	Dr. A. A. Ashby, Fairmont
Thayer	Dr. P. A. Reed, Deshler
Saline	Dr. A. C. Blattspieler, Tobias
Jefferson	Dr. H. H. Humphrey, Daykin
Nuckolls	Dr. J. B. Dierker, Lawrence

DISTRICT 8

Boyd	Dr. E. B. Bradley, Spencer
Holt	Dr. O. W. French, Page
Rock and Keyepaha	Dr. C. H. Root, Bassett
Brown	Dr. R. R. Brady, Ainsworth
Cherry and Sheridan	Dr. A. N. Compton, Valentine

DISTRICT 9

Hall	Dr. F. D. Ryder, Grand Island
Howard	Dr. Merton O. Arnold, St. Paul
Dawson	Dr. A. W. Anderson, Lexington
Buffalo	Dr. R. F. Jester, Kearney
Valley	Dr. J. G. Kruml, Ord
Custer	Dr. R. D. Bryson, Callaway

DISTRICT 10

Adams	Dr. Leonard Swanson, Hastings
Franklin	Dr. L. S. McNeill, Campbell
Kearney	Dr. H. S. Andrews, Minden
Phelps	Dr. H. A. McConahay, Holdrege
Harlan	Dr. J. N. Campbell, Stamford
Furnas	Dr. L. D. James, Oxford
Red Willow	Dr. K. W. Brimmer, McCook
Frontier	Dr. B. I. Mills, Maywood
Hitchcock	Dr. J. N. Stewart, Stratton
Chase	Dr. Geo. Hoffmeister, Imperial
Dundy	Dr. J. T. Premer, Benkelman

DISTRICT 11

Lincoln	Dr. T. J. Kerr, North Platte
Perkins	Dr. F. M. Bell, Grant
Keith	Dr. H. A. Blackstone, Lewellen
Deuell	Dr. S. O. Harris, Chappell

DISTRICT 12

Dawes and Sioux	Dr. C. M. Pierce, Chadron
Box Butte	Dr. G. F. Johnston, Alliance
Morrill	Dr. G. W. Pugsley, Bayard
Cheyenne	Dr. D. L. Abbott, Sidney
Kimball	Dr. R. D. Sinclair, Kimball
Scottsbluff	Dr. W. C. Harvey, Gering

A PRAIRIE DOCTOR OF THE EIGHTIES

By Francis A. Long, M. D., late editor of the Nebraska State Medical Journal, with two chapters on The Prairie Doctor's Wife by Maggie Long.

The Huse Publishing Co., Norfolk, Nebr., 1937.

Those who knew the late author have a treat in store. This interesting account of the early experiences of Dr. Long is not only enjoyable reading, but equally as informative. Indeed an insight into the author's autobiography constitutes a study in medical history of the middle west with Madison County as the typical setting. Student days and the "medical tyro" era are depicted with matured philosophy and most delightful humor. Equally wholesome are the narratives pertaining to the trials and tribulations of the young doctor building a practice in a district devoid of passable roads, telephones, or other means of transportation which in our times is hardly conceivable.

Professional achievements and honors are discussed with prophetic modesty. The origin and growth of the Nebraska State Medical Association is described with enthusiasm and frankness characteristic of the man who was a part of it and of whom the association was indeed a reciprocal part. The functions of an editor are clearly stated, and who can deny that he had lived up to the letter of these responsibilities?

The two chapters by Mrs. Long deal not only with tragi-comical incidents of the devoted couple's early struggles, but these, also, impart a great deal of information on the early social and medical history of Nebraska.

In our opinion the publishers deserve much credit for their encouragement and help in the final arrangement of the book. Incidentally, it is not only a well written book, but the make-up is equally commendable.

THE DIVISION OF MATERNAL AND CHILD HEALTH, NEBRASKA (STATE) DEPARTMENT OF HEALTH

MATERNAL CARE

Copies of "Maternal Care" have now been forwarded to physicians in 85 counties. This material will be forwarded to the remaining counties in the very near future.

MAY DAY CHILD HEALTH DAY 1938

May first falls on Sunday this year. An opportunity is thus presented for even greater cooperation from the churches than has been given in the past. It may also be possible to obtain space in supplements to Sunday newspapers. School observance may properly take place on the day preceding or the day after May Day. The slogan this year will be—

SPEED CHILDREN ON THE ROAD TO HEALTH

May Day has been regarded as a day for child health activities since the Congressional measure of May 18, 1928, which authorized the President to make such a proclamation.

STATE PROGRAM

Several months ago Miss Ada R. Eichbaum asked the Director of the Division to discuss Maternal Health and the State Program before a group of nurses and other interested persons on January 19th. Certain salient points were brought up for consideration. We attempted to point out to this group that three public health nurses actually working in this division constitute a wholly inadequate field staff for the inauguration of a Maternal and Child Health Program for an area 400 miles long and 200 miles wide with a population of a million persons. The current appropriation from the legislature of 16 thousand dollars, even though generously matched with other funds, provides only a limited and very thinly spread educational program.

BOYD COUNTY

The demonstration unit in Maternal Hygiene in Boyd County was visited by the director early in January. Since this county has carried an intensive nursing program in this field for one year, it seemed desirable to learn the time at which the nurse called first upon pregnant women on her roster. All the physicians have been very gracious about assisting the nurse to make her first visit as early as possible, but even with this very real assistance it was the sixth month during which the largest number of first visits were made. Dr. R. E. Kriz, President of the Eighth Councilor District, prepared the following statement for use in the report of the Boyd County demonstration:

SUBJECT: NURSING RELATIVE TO MATERNAL AND CHILD HEALTH

"I would like to make a suggestion, that in some manner the expectant mothers be interviewed at an earlier date. This I believe is important in combating the severe toxemia pregnancy. Also in the cases of syphilis if any good is to be done for the infant, treatment (of the mother) must be directed very early in pregnancy as very little improvement is to be expected in the child by treatment (only during the last two or three months)."

Early visits by the public health nurse have resulted elsewhere in earlier medical supervision by the physician.

Listed below are the dates which have been cleared for refresher courses.

February	1	Auburn	Dr. Palmer Findley
	3	Kearney	Dr. Harold Morgan
	8	Falls City	Dr. E. S. Wegner
	10	Kearney	Dr. Earl Sage
	15	Tecumseh	Dr. H. E. Harvey
	16	Lynch-Spencer	Dr. Herman M. Jahr
	17	Kearney	Dr. David Findley
	22	Humboldt	Dr. H. B. Hamilton
	23	O'Neill	Dr. E. R. Hays
	24	Kearney	Dr. Harry Murphy
March	1	Beatrice	Dr. J. E. Henske
	2	O'Neill	Dr. E. S. Wegner
	3	Kearney	Dr. Floyd Clark
	8	Pawnee City	Dr. Herman M. Jahr
	9	O'Neill	Dr. L. O. Hoffman
	10	Kearney	Dr. E. W. Hancock
	16	O'Neill	Dr. Harold Morgan
	23	Spencer-Lynch	Dr. E. W. Hancock

PROTAMINE ZINC INSULIN SQUIBB

Physicians will be interested to know that Protamine Zinc Insulin Squibb is now available in two strengths, 10 cc. vials of 40 units per cc. and 10 cc. vials of 80 units per cc.

Protamine Zinc Insulin has been available in the 40-unit strength since February 1, 1937. It was felt, however, that a higher potency was also needed for the many diabetics who require large amounts of Insulin daily.

While the efficiency of the two strengths of Protamine Zinc Insulin may be identical, the transfer of a patient from one strength to the other should be made only under the careful supervision of a physician until more experience has been accumulated.

Protamine Zinc Insulin Squibb is marketed under license from the Insulin Committee, University of Toronto.

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PROGRAM

NEBRASKA STATE MEDICAL ASSOCIATION

April 26-27-28

TUESDAY, APRIL 26, 1938—9:00 A. M.

9:00 Opening of meeting by Dr. Clayton Andrews, President Lancaster County Medical Society.

SYMPOSIUM ON VENEREAL DISEASE

Dr. A. D. Munger, Lincoln, presiding.

9:05 "Nebraska's Program of Venereal Disease Control."
—Dr. E. G. Zimmerer.

9:30 "Treatment of Acute and Subacute Gonorrhea."
—Dr. W. J. McMartin, Omaha.

10:00 "Early Syphilis and Its Cutaneous Manifestations."
—Dr. C. C. Tomlinson, Omaha.

10:30 "The Prevention and Treatment of Neurosyphilis."
—Dr. A. E. Bennett, Omaha.

11:00 "Syphilis of the Cardio-Vascular System."
—Dr. J. C. Thompson, Lincoln.

11:30 "The Immunological Aspects of Syphilis."
—Dr. Charles C. Dennie, Kansas City, Mo.

TUESDAY, APRIL 26, 1938—1:50 P. M.

1:50 Installation of the President of the Nebraska State Medical Association.
—Dr. George W. Covey, presiding.

Introduction of President-elect, Dr. Homer Davis.
—Dr. Roy W. Fouts.

2:00 President's Address.
—Dr. Homer Davis.

2:20 Address, Program Committee.
—Dr. Roy H. Whitham, Lincoln.

2:30 "The Early Diagnosis and Prevention of Rheumatic Heart Disease."
—Dr. Clayton J. Lundy, Chicago.

3:00 "A Study of One Thousand Cases of Gallbladder Disease—The Results of Medical and Surgical Treatment."
—Dr. J. Dewey Bisgard, Omaha.

3:30 "Deficiency and Nutritional Disorders in the Etiology and Treatment of Cardiac Diseases."
—Dr. F. W. Niehaus, Omaha.

4:00 "Undescended Testicle."
—Dr. J. E. Courtney, Omaha.

4:30 "Pulmonary Emphysema."
—Dr. Ephraim Korol, Lincoln.

TUESDAY EVENING

Dr. P. H. Bartholomew, Lincoln, presiding.

6:30 Dinner.
Movie—"The Interpretation of a Normal Electrocardiogram."
—Dr. Clayton J. Lundy, Chicago.

"The Effect of Malaria on Syphilis and Other Diseases in South America."
—Dr. Charles C. Dennie, Kansas City, Mo.

WEDNESDAY, APRIL 27, 1938—9:00 A. M.

Dr. J. J. Hompes, Lincoln, presiding.

9:00 "The Treatment of Pseudoarthrosis Resulting From Fracture of the Femoral Neck."
Dr. W. R. Hamsa, Omaha.

9:30 "The Small Hospital in Nebraska."
—Dr. Dexter D. King, York.

10:00 "Cancer of the Stomach."
—Dr. Karl Meyer, Chicago.

10:30 Movie } Birth of a Baby.
11:00 Movie }

WEDNESDAY NOON LUNCHEON

Dr. J. Frederick Langdon, Omaha, presiding.

"Obesity."
—Dr. August A. Werner, St. Louis, Mo.

"Administration of Fluids to Surgical Patients."
—Dr. Lawrence P. Engel, Kansas City, Mo.

"Perforated Ulcer."
—Dr. Karl Meyer, Chicago.

WEDNESDAY, APRIL 27, 1938—2:00 P. M.

Dr. Roy H. Whitham, Lincoln, presiding.

2:00 "Hemolytic Jaundice: The Effect of Splenectomy."
—Dr. John C. Sharpe, Omaha.

2:30 Title to be announced.
—Dr. Lawrence P. Engel, Kansas City, Mo.

3:00 "A Report on the Surgical Treatment of Carcinoma of the Rectum and Recto-Sigmoid."
—Dr. Louis E. Moon, Omaha.

3:30 "Speakers Bureau."
—Dr. J. D. McCarthy, Omaha.

4:00 "Female Sex Hormones."
—Dr. August A. Werner, St. Louis, Mo.

4:30 "Treatment of the Psychoses With Insulin and Metrazol."
—Dr. G. A. Young, Omaha.

THURSDAY, APRIL 28, 1938—9:00 A. M.

Dr. A. A. Conrad, Crete, presiding.

9:00 "Volvulus and Gangrene of the Omentum."
—Dr. Clayton Andrews, Lincoln.

9:20 "Irradiation Therapy of Cancer of the Uterine Cervix."
—Dr. E. W. Rowe, Lincoln.

10:00 "The Diagnosis and Management of Peripheral Vascular Disease."
—Dr. DeTakats, Chicago, Illinois.

10:30 "Sciatic Pain Laminectomy—Case Reports."
—Dr. J. Jay Keegan, Omaha.

11:00 Title to be announced.
—Dr. V. P. Blair, St. Louis, Mo.

11:30 "The Clinical Aspect of Poliomyelitis."
—Dr. John Zahorsky, St. Louis, Mo.

THURSDAY NOON LUNCHEON

Dr. Herbert Davis, Omaha, presiding.

"Immediate Treatment of Facial Injuries."
—Dr. V. P. Blair, St. Louis, Mo.

"The Treatment of Varicose Veins."
—Dr. G. DeTakats, Chicago.

THURSDAY, APRIL 28, 1938—2:00 P. M.

Dr. E. S. Wegner, Lincoln, presiding.

PEDIATRIC SYMPOSIUM

2:00 "Newer Developments in Child Nutrition."
—Dr. P. C. Jeans, Iowa City, Iowa.

2:30 "Nutrition as Affected by the Economic Level."
—Dr. George E. Robertson, Omaha.

Discussion—Dr. Clyde Moore, Omaha.

3:00 "Anorexia."
—Dr. A. G. Dow, Omaha.

Discussion—Dr. J. Harry Murphy, Omaha.

3:30 "Obesity."
—Dr. E. W. Hancock, Lincoln.

Discussion—Dr. Floyd S. Clark, Lincoln.

4:00 "Relation of Nutrition to Infection."
—Dr. Paul M. Bancroft, Lincoln.

Discussion—Dr. H. B. Hamilton, Omaha.

WOMAN'S AUXILIARY PROGRAM

TUESDAY, APRIL 26

Registration Headquarters—Hotel Cornhusker.

Executive Session 10:00 A. M.—Hotel Cornhusker.—*Mrs. Earl E. Farnsworth, presiding.*

Informal Luncheon 12:30 P. M.—Hotel Cornhusker.

Tea, 3:00 P. M.—*Mrs. J. E. M. Thomson, 1234 Crestdale Road.*

WEDNESDAY, APRIL 27

Annual Business Meeting, 9:00 A. M.—Hotel Cornhusker.—*Mrs. Earl E. Farnsworth, presiding.*

Movie, "Birth of a Child," 11:00 A. M.—Lincoln Theatre. (Guests of the Nebraska State Medical Association.)

Luncheon and Program, 1:00 P. M.—Lincoln Country Club. Tickets $1.00 per plate, available at headquarters. Early reservations will be appreciated.

Banquet, 6:30 P. M.—Hotel Cornhusker. Nebraska Medical Association.

THURSDAY, APRIL 28

Executive Session, 10:00 A. M.—Hotel Cornhusker.—*Mrs. C. W. Pollard, presiding.*

Dutch Treat Luncheon, 12:00 P. M.—Hotel Cornhusker.

Automobiles provided for all occasions at Headquarters.

AMOEBIASIS

STUDY OF ONE HUNDRED CASES

GEORGE W. COVEY, M. D.; FLOYD L. ROGERS, M. D.,
and GEORGE R. UNDERWOOD, M. D.,
Lincoln.

The objects of this paper are to draw attention again to the prevalence of infection by Entamoeba histolytica outside the tropics; to attempt to clarify by a detailed study of one hundred cases, the symptom complex encountered in these infections; and, to detail the methods used by us in searching for these organisms.

Craig,(1, 2) in 1921 and again in 1927, gave as his opinion that infection with Entamoeba histolytica, long considered a tropical disease, was present in from five to ten per cent of all the inhabitants of the United States. This author has continued to call the attention of the profession to the wide spread infection of man throughout the United States; to the necessity of separating the small group having dysentery from the great group having amoebiasis; to the fact that so-called "carriers" have symptoms; etc. One,(3) of his terse statements regarding these matters may well be quoted.

(3)"Until the profession understands that amoebic dysentery is only one stage of amoebiasis little can be learned from the standpoint of prophylaxis and treatment. It is unforunate that the term amoebic dysentery should have become in the minds of most medical men a synonym of amoebiasis or amoebic infection, for while dysenteric symptoms are quite characteristic of the serious cases of infection with Entamoeba histolytica, the vast majority of such infections are not accompanied by dysenteric symptoms, but by much milder symptoms usually attributed to some other factor and not recognized as the result of infection with this parasite."

Craig(3) summarizes surveys for amoebic infection made by Craig, Boek and Stiles, Wight, Faust, Meleney, Sistrunk, Griffin and Sanford.

More recently Meleney(4) and Sumerline(5) have reported further surveys. If the results of all these surveys be summarized we find that stools from a total of 27,915 people were examined. Of these there were 2,977 found to be infected with Entamoeba histolytica or 10.66 per cent. These surveys represent areas from coast to coast and from Minnesota to Louisiana. Those examined undoubtedly came from all sections of the United States.

Since the Chicago outbreak of dysentery in 1933 the literature has become voluminous but the information regarding the incidence of amoebiasis as distinguished from amoebic dysentery has not been increased significantly. Most of the pertinent information listed above was available prior to the Chicago epidemic.

Regardless of this mass of evidence and much more that is not presented here, the general idea still prevails amongst practitioners that amoebic infection is uncommon save in the tropics and that the terms amoebiasis and amoebic dysentery are synonymous.

One of us recorded previously(6, 7) in the literature the occurance of infection by Entomoeba histolytica in Nebraska.

Consideration of the climate, water supply, sewage disposal, source of fresh vegetables and fruits in Nebraska convinces us that the disease is probably contracted here by eating fresh, uncooked vegetables or other foods that have become contaminated elsewhere or that have been contaminated by infected handlers in this area.

Such epidemics as occurred in Chicago have not occurred in this area as far as we can determine, although a few of our cases had a direct relationship to the Chicago outbreak. A few of our cases have had direct contact with infected members of their own families who have been known to have the disease. A part of the individuals have traveled widely but some have never been out of this state.

We believe that the method of collection of stools is of primary importance in the diagnosis of amoebiasis. The method we have used for a number of years is to have the patient come to the office in the morning without breakfast and administer sufficient sodium phosphate for brisk catharsis. We allow the patient to eat thirty minutes following this. All stools passed that forenoon are collected in the office in wax paper lined pans and promptly examined. They are not only examined in the fresh state but smears are made, strained with iron haematoxylin, and examined.

We have found that placing the stool in an incubator soon destroys the trophozoites if any be present. No warm stage is used because it is unnecessary and it also frequently leads to rapid dissolution of the active forms. We have personally observed motility of trophozoites for six hours in fresh preparations when the slide is placed on an ordinary microscope stage, at usual room temperature and prevented from drying. We have found also that on hot summer days, when room temperature is above that of the body, the effect is like that of incubating the stool, the trophozoites disappear very rapidly as if by some lytic process. On these days examination of specimens must be completed very rapidly if one wishes to find the active forms.

Another important point in the selection of material for examination is to avoid mucus. We believe mucus is incompatible with the motile amoeba as it is with many bacteria. If the specimen is liquid, examine material obtained with a pipette from the bottom of the pan. This is, of course, not in accordance with the usual textbook instruction.

It is rare that the stained smears show infections which were missed in examining the warm stool. Their usefulness is largely limited to more detailed study of the nuclear structure and as a permanent record of the case.

The collection of the data presented in this paper began twelve years ago following Craig's(1) statements as to the prevalence of amoebiasis. Those cases previously reported by one of us(6, 7) are included in the group of cases reported in this paper. We have studied one hundred cases of Entamoeba histolytica infection that have occurred in our practice. These cases have been picked at random from a considerably larger number. Eighteen of the included cases had multiple protozoan infections in addition to Entamoeba histolytica.

While the cases presented here can in no wise be compared with any survey because we are examining only sick people and selecting those for stool examination who show findings suggestive of infection, it is interesting to note that approximately one in five or twenty per cent of the stools examined prove to be positive for Entamoeba histolytica.

We shall attempt to elaborate those points in these patients' histories, physical and laboratory findings that may constitute a possible syndrome and which, when present, should lead us to suspect an amoebic infection.

The age and sex incidence closely parallel those of patients admitted for all causes and are therefore unimportant.

The symptoms presented in the histories of these 100 cases may be grouped in order of their frequency into (A) gastro-intestinal complaints; (B) various pains, notably in the back, in joints, along nerve trunks, etc., which we have included under the heading of "Rheumatic"; (C) General symptoms, such as weight loss, weakness, and fatigue; (D) those referable to the central nervous system and, (E) cardiovascular.

The symptoms, physical findings and laboratory findings have been summarized as follows:

A. Gastro-Intestinal Complaints		95%
1. Discomfort of some degree in abdomen — total		59%
Pain in abdomen		34%
Discomfort in abdomen		24%
Tenderness in abdomen		7%
Pain in right upper quadrant		4%
2. Total diarrhoeas		58%
When admitted	obvious overlapping	18%
In past		13%
Recurrent		33%
Alternating with constipation		13%
3. Constipation		43%
4. Excessive gas		38%
5. Nausea		20%
6. Gross blood in stool		15%
7. Vomiting		11%
8. Mucus in stool		11%
9. "Proctitis"		9%
10. Anorexia		6%
B. Pains of "Rheumatic" kind		42%
C. General Symptoms:		
1. Weight loss		31%
2. Weakness		23%
3. Fatigue		18%
4. Fever		2%
D. Central Nervous System Symptoms:		
1. Headache		21%
2. Vertigo		21%
3. Nervousness		11%
4. Syncope		3%
5. Tremor		2%
6. Insomnia		1%
E. Cardiovascular Symptoms:		
1. Palpitation		7%
2. Tachycardia		2%

Symptoms listed, but of little importance because of their infrequent occurrence are: Pyrosis, foul stools, dysphagia, excessive hunger, green stools, stomatitis.

Physical Findings:

1. Tenderness in abdomen	31%
2. Abdominal distention	21%
3. Underweight	20%
4. Tachycardia	17%
5. Tender liver	6%
6. Cryptitis	7%
7. Chronic rhinitis	8%
8. Fever	7%

Others, seemingly unimportant or not directly connected with the disease were, tremor, hemorrhoids, hypertension, bradycardia, proctitis, glossitis, edema and jaundice.

One case had liver abcess with rupture, also perforation of bowel as proven at autopsy; one case had generalized peritonitis, obviously due to perforation of intestines. Both of these were frank dysentery cases.

Laboratory Findings:

1. Secondary anemia	35%
2. Urobilinogenuria	13%
3. Indicanuria	5%

The total number showing gastro-intestinal symptoms, 95 per cent, makes this group of prime importance.

The group of symptoms designated as "discomfort in the abdomen" contains a number of subheadings. Actual pain in the abdomen, not localized to any particular area was complained of by 34 per cent. A mere sense of discomfort in the abdominal region, making the patient almost constantly aware of this portion of his body was noted in 24 per cent. Tenderness in the abdomen, more often the lower half and rarely localized to a given point was noted by seven patients. Pain localized in the right upper quadrant, was complained of by four.

The group of 58 listed as having diarrhoea requires some explanation. Of these only 18 had diarrhoea at the time of admission. Thirteen admitted having had an attack of diarrhoea sometime in the past. This could not always be definitely connected with the present illness. Thirty-three had definite histories of recurrent diarrhoea. This often amounted to only one or two sudden, explosive, loose stools or perhaps at times an attack which lasted two or three days. After these atttacks the even tenor of the bowel action would be resumed until again interrupted by a similar episode. Often the patient attributes these attacks to some food he has eaten and may fail to mention them until asked specifically about them.

Another 13, perhaps belong in this same category. They are those of the constipated group whose regular constipation is periodically interrupted by short attacks of diarrhoea. These patients often feel better after the diarrhoea and consider it only natural and fortunate that the constipated bowel should purge itself at periods.

Habitual constipation was the history in 43 per cent. Some of the most severely constipated individuals that we have seen have been found infected with Entamoeba histolytica and in some instances, eradication of the amoebae has led to a cure of the costiveness.

Taken together, as alterations in the motility of the bowel, constipation and/or diarrhoea were present in a large percentage of this group. There is sufficient overlapping in the tabulations of these to obviate the possibility of giving the exact number, but approximately 80.

"Excessive gas" as a complaint is less frequent than those considered above but is of importance especially when associated with the discomfort and alteration of motility. This complaint is usually not one of eructation but of having too much flatus in the bowels. Often the complaint of the patient can't be confirmed at physical examination, the bowel seeming to contain no more than the usual amount of flatus. It would seem that the patient is unusually sensitive to the ordinary amount of gaseous distention and movement in the colon.

The important symptoms in this group may then be summarized as general discomfort, often amounting to pain, rarely localized to any one portion of the abdomen; diarrhoea in some of its phases, rarely continuous, almost never suggesting dysentery, often recurrent; in some, interrupting periods of more or less normal bowel action, in others, a chronic constipation; constipation, sometimes severe and intractible; and, finally, "excessive gas," the importance of which is enhanced by its frequent association with the other members of this group.

The group entitled pains of "rheumatic" type should be further amplified. Often these pains constitute one of the presenting symptoms. They are usually suggestive of the root irritation commonly seen in arthritis involving the spine, that is, in the realm of the cervical plexus, in the shoulders and down the arms, in the intercostal spaces, down the sciatic distribution, and in various areas of the back. Moreover, there is often other evidence of the actual presence of arthritis, either in the spine or in other joints. This may or may not be typically one or the other type; often there is evidence which suggests the presence of the so-called mixed type of arthritis.

Of the general symptoms, none is so frequent as gastro-intestinal complaints or rheumatic pains, but in studying the individual cases one is impressed by the importance of the history of weight loss, weakness and fatigue. All of these may be present in the same patient but a majority of the patients present at least one of these symptoms. Fever either as an historical event or a physical finding seems important largely by its infrequency.

Symptoms referable to the central nervous system and the cardiovascular system, as may be seen from the tabulations, are much less important from the point of view of frequency of occurrence. Headache, vertigo and nervousness are the only ones at all common. However, if one or more of these is associated with the more common complaints described above, it immediately becomes of enhanced importance.

On consideration of the physical findings one is at once struck by their relative insignificance when compared with the profusion of symptoms. However, if one or more of the four most common physical findings; tenderness in the abdomen, abdominal distention, underweight and tachycardia, is associated with the cardinal symptoms enumerated above its importance in suggesting the possible presence of Entamoeba histolytica infection is quite evident.

The abdominal tenderness, like the pain and discomfort, is not often localized as in appendicitis,, gallbladder disease and other well known abdominal conditions. It is more likely to be tenderness of the colon, both left and right. The descending colon and sigmoid are perhaps slightly more than normally palpable and definitely more sensitive than normal. The cecum and ascending colon are usually more tender than the left colon and often there is gurgling under the examining fingers. This tenderness is rarely sufficient to suggest any very serious condition and was, of course, elicited in only 30 per cent of the cases.

Abdominal distention was never extreme nor even very marked except in the few cases of frank dysentery who had complications leading to peritonitis. It is, rather, just a little more fullness than one would expect in the given patient.

Physical findings obviously due to other conditions in the patient are not listed here.

All of these cases had complete blood counts, Wassermann tests and urine analysis. A large proportion of them had the sedimentation rate of the erythrocytes recorded. A review of all this data reveals only one finding of sufficient frequency to consider significant, that is, a secondary anemia, which as noted was present 35 times in 100 cases. One should call attention to the relative absence of eosinophilia and indicanuria. The eosinophile count was rarely over 3 per cent and never over 5 per cent.

If, then, a patient comes complaining of distress or pain in the abdomen, rather general and not characteristic of the usual abdominal diseases, accompanied by disturbances of bowel motility as described above, a complaint of "gas" in the bowel or a sensation of gaseous distention, of "rheumatic" pains of one kind or another, with loss of weight and strength, fatigue, headache, and vertigo; and if one finds him underweight, with a tender colon and perhaps a little distention and if the laboratory findings are sparse save for a secondary anemia, the picture strongly suggests an amoebic infection and its presence or absence should be proved.

Of course, few cases show all the above picture but it is to be recalled that 95 per cent of this series showed some of the gastro-intestinal complaints. Obviously various combinations of these symptoms and findings may be present with one or more of those of lesser importance. Any case having typical or atypical combinations of these symptoms and findings in which a definite diagnosis seems difficult, especially those in which one is so often tempted to make the diagnosis of neurosis, neurasthenia, mucus colitis, spastic colon, irritable colon, etc., should be carefully examined for an Entamoeba histolytica infection.

SUMMARY

1. Attention is directed to the mass of reliable information to be found in the literature indicating that amoebiasis is common throughout the United States. This has largely accumulated since Craig, in 1921 drew our attention to amoebiasis as a common condition of which amoebic dysentery, though relatively rare, is only one manifestation.

2. The methods of collection and examination of the stools as performed in our laboratory include the following important points; obtain stools after a saline laxative; avoid the examination of mucus; preserve the stools at room temperature; avoid incubation and warm stages because of the rapid dissolution of trophozoites, which may occur even on unusually hot days; obtain the bit of liquid stool for examination by pipette from the surface of the paraffined paper covering the bottom of the pan.

3. Stained smears have been useful largely for more detailed study of nuclear structure and as a permanent record. They seldom reveal the organisms when the fresh stool examination has been declared negative.

4. A study is presented of the symptoms, physical findings and laboratory findings in 100 cases of amoebiasis. Certain symptoms and combinations of symptoms, especially abdominal discomfort, changed motility of the gut, notably recurrent diarrhoea, and excessive gas, "rheumatic" pains, weight loss, weakness and fatigue are suggestive of amoebic infection. These symptoms are most often associated with tenderness in abdomen along the colon, slight abdominal distention, underweight and tachycardia. The only laboratory finding of significance aside from the finding of the amoebae is a mild secondary anemia.

CONCLUSIONS

1. Nebraska is no exception to the statements so frequently made since 1921, that amoebiasis is a common condition in all parts of the United States.

2. Patients coming to the clinician because of illness resulting from amoebiasis present symptoms and physical findings somewhat characteristic of their parasitic infection. These symptoms and findings, if not assuming the dignity of a symptom complex, are sufficient to suggest to the physician the possibility of amoebiasis and should lead to careful stool examinations.

3. The method of stool examination is important and should be carried out with as much preparation and care as any laboratory procedure. It demands cooperation between the clinician, the patient and the laboratory personnel.

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EXTREME LEUKOCYTOSIS IN WHOOPING COUGH

(Lancet, London, July 31, 1937). Pearson and Newns cite a case of whooping cough with a high leukocyte count (145,000 per cubic millimeter) and a relative increase in the lymphocytes. This feature of the blood picture is therefore much more valuable diagnostically than either the proportion of lymphocytes or the level of the leukocyte count. Unlike those in lymphatic leukemia, these were mature in form. Such high counts are extremely rare and seem to be associated with a complicating bronchopneumonia.—*Journal A. M. A.*

CONGENITAL HYPERTROPHIC PYLORIC STENOSIS

A REVIEW OF FORTY-ONE OPERATIVE CASES

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The improvement in the results of surgical treatment in congenital hypertrophic pyloric stenosis is an excellent example of what can be accomplished by (1), intelligent cooperation between Pediatrician and Surgeon and (2), widespread information to the general medical profession of the method of early diagnosis of a condition which lends itself admirably to surgical treatment.

In the past few years the reports of large series of consecutive cases with no mortality, or a very low mortality, speaks well for the efficacy of widespread medical information. The review of my series of forty-one successful cases is offered and not because it affords any new information on the subject but to call attention again to the fundamental points in diagnosis and the indications for selecting the time of operation in these cases.

In the series there were thirty-three males and eight females, which is the average proportion given by the majority of observers. The average age at onset was a little over twenty-one days. This also corresponds with the statistics published by the majority of observers. The disease is one of early infancy and usually begins in the first few weeks of life. In this series the symptoms began at birth in four cases. The latest onset of symptoms was forty-two days after birth.

SYMPTOMS

1. MOST IMPORTANT SYMPTOM—VOMITING

This begins after taking food and soon becomes projectile in character. Projectile vomiting was present in all of my cases. If allowed to continue, all food is vomited and the vomiting comes on immediately after the ingestion of food. The vomitus does not contain bile.

2. PERISTALTIC WAVE

A peristaltic wave across the epigastrium from left to right was observed in all but two cases.

3. TUMOR

A tumor was definitely palpable in eighteen cases. In six cases the palpation of a tumor was doubtful. In the other seventeen cases a tumor was not made out. Some writers claim that a tumor can be felt in all cases, and I do not doubt that this is correct. It is questionable in my mind whether, with the other confirmatory symptoms and signs of the condition present, it is worth while to persist in attempts to feel a tumor when the diagnosis can be made by other means. The technique for examining for a tumor is important. The child should be given some type of pacifier. The left hand should be placed behind the right side of the child's back and the fingers of the right hand should be placed from below upward and to the left so that they pass beneath the lateral margin of the right rectus muscle. The tumor which feels like a small hard nodule is felt between the examining fingers and the right side of the spine. Sometimes if an attendant makes pressure on the left side of the abdomen to force the stomach over to the right, the tumor may be palpated more easily.

4. LOSS OF WEIGHT AND DEHYDRATION

Loss of weight and dehydration were present to a greater or lesser extent in all of the forty-one cases. The order of occurrence of these symptoms is: (1) loss of weight together with the vomiting. This leads to dehydration. The dehydration leads to scanty urine and a dry and wrinkled skin. The feces are dry and hard and contain no curds.

With this symptom complex, namely: continuous vomiting, becoming projectile; a peristaltic wave; progressive loss of weight accompanied by dehydration, the diagnosis of congenital hypertrophic pyloric stenosis can be established. In pyloric spasm, as a rule, the attacks of vomiting are intermittent; in true stenosis there is no intermission.

5. X-RAY

The x-ray is not necessary to establish the diagnosis and has not been used in any of my cases. The clinical picture is so clear that further confirmation of the diagnosis is not necessary. In fact the use of the barium meal in these cases may be contraindicated. It is well known that there is a certain danger in operating upon a gastro-intestinal tract which contains barium. Also, barium is apt to remain in the stomach even though it be carefully washed out and will pass through into the intestine following the relief of the obstruction of the pylorus. It may not cause any trouble but I believe that mother's milk or a milk mixture properly modified by a Pediatrician is of much more value to the infant than residual barium in the stomach passing on into the intestine.

THE TIME TO OPERATE

Experience with these cases has definitely established the fact that congenital pyloric stenosis does not call for emergency operation. In the majority of instances these children have lost considerable weight. They are dehydrated and as a result are in poor physical condition. The most important therapeutic indication is the restoration of water balance before operation is undertaken. This can be accomplished either by hypodermoclysis, intravenous injection of fluids, blood transfusion or intra-peritoneal injection of salt solution. Of these methods the last has been the method of choice in all of these cases. It is simple and quickly performed. I have seen no peritoneal irritation from its use and it has not in any way interfered with the operative technique. If the case is seen early before marked dehydration is present and there is little or no danger in operation, I believe it is a good plan to operate at once in order to relieve the anxiety of the parents. But if there appears to be any danger in operation it should be delayed until, by means of one or the other methods spoken of above, the child is gotten in the best condition possible before operation.

THE OPERATION

The operation in all cases of my series has been the standard Fredet-Rammstedt operation. The incision has been made high over the liver. The pylorus is identified by touch and is brought into the wound with a sponge forceps. The peritoneum is incised along the avascular line for the full extent of the tumor and the muscle split with the handle of a scalpel until the mucosa bulges into the wound for the full length of the incision. The pylorus is then returned to the abdomen. The peritoneum and muscle are brought together with a chromic gut suture and the skin and aponeurosis of the rectus muscle with another chromic gut suture. While the suturing is taking place salt solution is injected into the peritoneal cavity. The wound is dressed with a dry dressing held in place with tight adhesive strapping and is allowed to remain without changing for seven days. At the end of that time the dressing is changed and the wound is usually well healed. There has been no abdominal hernia in any of these cases.

The question of the type of anaesthesia to be used is of great importance. In nearly all of these cases the operation has been done under ether, administered by the drop method. No complications have occurred. Local anaesthesia has been advocated and I have used it in a few cases. In some of these cases I have been much more worried after the local anaesthesia than after those done under general anaesthesia. The disturbing symptoms following local anaesthesia consisted of dyspnoea, some cyanosis and a rapid and feeble pulse which lasted for several hours. These came on even though the operative technique had been carried out without difficulty and everything appeared to be the same as under general anaesthesia. The symptoms did not seem to be those of postoperative shock but did correspond to the symptoms of Novocain poisoning. This led me to calculate the amount of Novocain per kilogram of body weight which the child received in order to anaesthetize the abdominal wall, and compare this with the lethal dose of Novocain. I found that with the use of only 10 cc. of 1% Novocain to anaesthetize the abdominal wall a baby of five pounds would receive a dose of Novocain which would be lethal if injected intravenously. Consequently, the amount of Novocain used to induce anaesthesia, even if restricted to a minimum, subjects the child to the dangers of Novocain poisoning, particularly if the amount of Novocain used is not watched very carefully. The safety factor consists in the difference between the rapidity of subcutaneous as compared to intravenous absorption and this is not very great. As a concrete example the use of 10 cc. of 1% Novocain solution in the abdominal wall of a baby of five pounds is the equivalent of the use of 300 cc. or 10 ounces of 1% Novocain in the tissues of an adult weighing 150 pounds.

POSTOPERATIVE CARE

The postoperative feeding of the infant is of great importance and in these cases has been under the guidance of a Pediatrician. Feeding is started early and carefully watched. The main point to be guarded against is over enthusiasm and too rapid increase in the diet.

APPENDICITIS FROM OXYURIS

(Prensa Medica Argentina, Buenos Aires, July 7, 1937). Battaglia and di Fiore found appendicitis caused by Oxyuris with a frequency of 2%. It is more frequent in children than in adults. Only two patients out of a group of eleven suffering from oxyuris appendicitis complained of symptoms of oxyuriasis (occasional dizziness with unconsciousness). A microscopic study of the removed appendix was performed in three cases. The appendix was the seat of chronic inflammation and typical oxyuris lesions. The hemogram in three cases showed eosinophilia (4, 5 and 8%, respectively). The appendix was intensely parasitic (twenty-nine, sixty-two and eighty-three oxyurids, respectively). The largest number of oxyurids isolated from the appendix were female. The examination of the feces for parasites and of the lumen of the appendix for eggs gave negative results—*Journal A. M. A.*

PUERPERAL INFECTION*

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Many and varied are the problems related to maternal welfare, and foremost among them is puerperal infection. Since septic infection is largely preventable it remains as a reproach upon modern medicine that the incidence of infection following childbirth remains to this day the paramount problem in obstetric practice. We do not know whether prehistoric races were subjected to infections but we do know that civilization has added measurably to the risks attending childbirth. Primitive women unattended in giving birth were rarely, if ever, infected. As civilization advanced complications of varied sorts arose, requiring assistance, and the means employed were the very factors that increased the hazards of infection. Henry Jellet tells us that prior to the introduction of antisepsis the mortality among women in childbirth was less when unattended than among those who were assisted in their efforts at delivery. The explanation for this apparent contradiction is, I take it, that along with the application of antisepsis came the more frequent practice of manual and instrumental deliveries—of accouchement force, of versions, of the application of forceps and caesarian section.

For thousands of years obstetrics was in the filthy hands of midwives and upon them the responsibility for infection was rightly laid. In the 16th century doctors began to take a hand with the result that we read of frightful epidemics of puerperal infection which continued throughout the 16th, 17th and 19th centuries. This was the period in which operative intervention was running rampant. To be sure, there was a sharp and decisive drop in maternal mortality and in the incidence of infection following the introduction of antisepsis but we have witnessed no betterment since the turn of the 20th century. Says Brooke Bland "Of the lethal triad in puerperal women—sepsis, toxaemia and hemorrhage—it (sepsis) holds first place in accounting for 40 per cent of the patients who succumb." A disease of great antiquity septic infection remains a threat to every child-bearing woman.

Gratifying progress has been made of late years in the instruction of students and nurses, prenatal clinics are in operation in our medical centers where obstetrics is practiced and taught, many improvements have been made in the technic of delivery, yet with all this there is abundant evidence that the United States is lagging behind most of the nations of the civilized world in checking the ravages of infection in childbirth.

We are repeatedly charged with having the highest maternal death rate in the civilized world. Is there justification for such a damning indictment? The epidemiological report of the League of Nations for July 15th, 1930, presents a table of 26 nations in which the near truth of the assertion is attested. Here we learn that the general maternal death rate in the United States for the preceding few years was 6.5 per 1,000 live births, with only Greece exceeding our record with a death rate of 7.1. Greece and Belgium exceeded our mortality rate of 2.4 of puerperal sepsis by a narrow margin, while England, France, and the Netherlands were a half to a third of our percentage. When we reflect that in our country we resort to operative intervention two to three times as frequently as do they in the nations above mentioned there is good reason to account for our deplorable record.

We learn from the report of the Children's Bureau of the United States Department of Labor, published in 1934, that of the 15,000 women who die in childbirth annually, 6,000 are chargeable to infection, a percentage of 2.5 per 1,000 childbirths. Brooke Bland ventures the estimate of 300,000 septic cases a year in the United States, this would give an increase of 15 per cent of the 2,000,000 annual live births in the nation. One thing is certain—many cases are not so reported and for reasons that are obvious. It is particularly so of post-abortive infections.

In the report of the Children's Bureau for 1934 we read: "Probably the most outstanding finding of this study is that one-fourth of all the maternal deaths from sepsis following abortion were due to puerperal septicemia, and these deaths from septicemia are the greatest single cause of maternal mortality." There were 1825 reported deaths following abortion and of this number puerperal septicemia claims 1,324 or 73 per cent. The report of the Analysis Committee sharply criticised the methods of physicians in the handling of abortions, laying greatest stress upon the hazardous practice of curettage where a known fever existed. Ninety-four per cent of the deaths were in cases where the curet was employed in the presence of fever. This in contrast to a 50 per cent death rate in cases that were afebrile at the time of the operation. I quote: "Physicians must be made to appreciate the seriousness of curetting these potentially septic cases."

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*Contribution to the Refresher Courses under the auspices of the Division of Maternal and Child Health, (State) Department of Health, Lincoln, Nebraska.

Compared with other states of the Union Nebraska is making a creditable showing in maternal mortality from sepsis. In 1925 the reported deaths from puerperal septicemia numbered 49; in 1929 there were 79 deaths and in 1936 there were 25 deaths. In looking over the report of the Children's Bureau I find but nine states excelled our record and two equalled it in 1934. I am confident that the forces now in operation will result in a still further betterment of our results and it is to this end that the Division of Maternal and Child Health of Nebraska is making its valued contribution.

Admitting that we cannot always avoid infection though our judgment and technic are faultless, that we cannot prevent injuries to the genital tract though we can do much to limit their extent, it cannot be said that any considerable number of infections can be classed as so-called autoinfections. The great proportion are due to contamination before, during, or after labor and abortion and are therefore preventable. It is not the economic royalists nor even the forgotten group but rather the great middle class that contributes most largely to the casualty list. Writes the Committee on Maternal Welfare: "On the side of the medical profession, the middle class medical man, or general practitioner, so-called, is the greatest danger in obstetrics . A midwife, under strict control, does comparatively little harm, but the doctor who does obstetric work to get the medical practice of the family, giving as little time and attention as possible, because it pays so little, is the one responsible for many obstetric disasters." If there be any truth in this accusation, then improved educational facilities and more generous remuneration would seem to be the remedies. My own notion is that we must all accept our share in the responsibility. Our modern maternities are not immune to the contagion, neither are the most skilled obstetricians. All this speaks for the fact that we are not as yet in full control of the factors which make for infection. Our task is to endeavor to improve our technic and to better our understanding of the many problems which have to do with the prevention of infection.

First of all we should bear in mind that there is a biological as well as a chemical defense mechanism in the body which we will do well to respect and not ruthlessly or thoughtlessly destroy. Two cases delivered under identical conditions become infected with the same type of organism, after a brief illness, one recovers, the other dies. Why? The answer lies in the presence of a defense mechanism that proved adequate in the one and not in the other. Or may it be that untimely and faulty management resulted in the single death and was responsible for the breaking down of this defense mechanism?

At every labor wounds are created, always at the placental site and often in the cervix and pelvic floor. Microorganisms contact these wounds, yet in the majority of cases there is no infection. This is so because nature has provided a cellular defense in the tissues which resists the inroads of the microorganisms. This biologic defense is found in the decidua: it is found in the wall of the uterus and in the parametrium in event that the invading organisms are not stayed by the protective zone of cells in the decidua. It is this defense mechanism that we do well to preserve and not break down and destroy by operative intervention. Thomas Emmet knew nothing of these safeguards but he did know from experience the disastrous effects of the curet when he pronounced it "an instrument of the devil." How seldom do we see a lethal type of infection in which there has been no meddlesome interference with nature's combative forces.

Having paid our respects to the curet what may we say of operative intervention in general? In the long past accouchement force played a deadly role but fortunately has now been abandoned. The forceps have been rightly termed "the most beneficient of surgical instruments," but we must recognize the added risk of infection attending forceps deliveries. As with forceps so with version the risks of infection are measureably increased. The Children's Bureau of the United States Department of Labor, 1934, asserts that 26 per cent of the deaths following forceps delivery and 19 per cent of the deaths following version were due to sepsis.

The manual removal of the placenta is a hazardous procedure, carrying a potential morbidity and mortality greater than that of most major operations. Professor Franz of Berlin found the mortality four times as great as that of cesarean section. Cesarean section, too often resorted to in the endeavor to overcome difficulties contributes largely to maternal mortality and in particular to septic infection. The low cervical section as a substitute for the classical operation in cases that are potentially infected has materially reduced the mortality rate. The Chicago Lying-In Hospital reports a maternity mortality of 1.23 per cent in 895 cervical sections as contrasted with a maternal mortality of 3.10 per cent in the classical operation. The high maternal death rate in cesarean section is largely chargeable to faulty judgment rather than to poor operative technic. A woman who is exhausted from prolonged labor, who is bled white, who is toxic, is an unfit subject for section. Repeated vaginal examinations, ineffectual efforts at delivery for forceps and version and rupture of the bag of waters for many hours preceding operation, all invite disaster. Failure to regard these factors which bespeak potential infection will measureably add to the mortality rate. The Children's Bureau (1934) reports a total of 573 maternal deaths following cesarean section and of this number there were 143 deaths credited directly. Commenting upon these data the Bureau has this to say: "Many of the deaths attributed by the attending physician to acute dilation of the heart or to acute ileus were probably due to sepsis. Also many of the deaths that were supposed to be due to acute nephritis were probably due to sepsis."

We have stressed the dangers inherent in manual and instrumental interferences with the processes of labor but it should be borne in mind that delay in interference may be equally disastrous. Too often delay in instituting a well-chosen means of delivery has resulted in the development of a state of affairs that does not admit of a favorable outcome. Faulty judgment as to when to interfere, or when not to intrefere, brings its penalty as truly as does the lack of technical skill in operating. Says Koehler: "One principal applies to all forms of puerperal infections; they will yield satisfactory results only if they can be performed early enough and without any additional harm to the patient. These terse requirements, incidentally, also express the wealth of difficulties which often prevent a realization of the hoped-for good effect. The decision of early enough and not too late, which in practice often means the equivalent for unnecessary, proves one of embarrassing perplexity."

Surgery is rarely called for in the management of puerperal infection. Curettage, the manual removal of the placenta, hysterectomy, the ligation of the pelvic veins and pelvic and abdominal drainage, are all procedures of limited application, requiring unfailing judgment and technical skill if they are to do good and not harm. With this in mind we look to less heroic measures and here again we encounter limitations beyond which no good may come. To my mind the sheet anchor in puerperal septicemia is the transfusion of small amounts of blood (200-300 cc) at intervals of 24 to 48 hours. Vaccines and serums are useless.

We are mindful of the necessity of surgical cleanliness in delivery but is there equal recognition of the fact that there are air-bound infections, that microorganisms in the air passages of attending doctors and nurses may be conveyed to the birth canal? Epidemics in maternity hospitals have been traced to this very thing. A recent outbreak of appalling proportions occurred in one of our foremost maternities. The contagion was directly traced to the throat of a resident physician. The wearing of face masks should be imposed upon all who come in direct contact with parturient women from the beginning to the end of the lying-in period. Another worthwhile precautionary measure would be the taking of cultures from the throats of all attendants.

While excluding all possible means of contamination we are to promote the general resistance of the expectant mother. Poor sanitation, malnutrition, anaemia, tuberculosis, syphilis, diabetes, nephritis and toxemias all tend to lower the body resistance to infection. Prolonged labor, placenta previa and escaped waters are predisposing factors. Intra-uterine douches and, to a lesser extent, vaginal douches are at best, ineffectual in ridding tissues of invading organisms.

Since surgery has its limitations in the management of puerperal infection and is capable of so much harm, and since we have no specific remedy, nothing that we can rely upon with full confidence, we do well to place all emphasis upon preventive measures.

Have we in sulphanilamide the long looked-for remedy in the treatment of blood-born infections? Some brilliant results are recorded and all we can now say is that sulphanilamide should be administered early in all cases where blood invasion is suspected or known. The chances of attaining a favorable reaction are determined by frequent blood cultures. Rarely will recovery take place if there are more than fifty bacteria to the cubic centimetre of blood. If in spite of the continued administration of the drug the number of bacteria increase a fatal issue is almost inevitable. The usual practice is to give large doses at the onset of symptoms and the dosage tapered off from day to day but not wholly withdrawn until temperature has reached normal for two or three days. Foulis and Barr (British Med. J. Feb. 27, 1937) give 24 five-grain tablets in each 24 hours for 7 to 10 days—no harm has resulted from these large doses. Daily doses of 48 tablets for 4 days were given in a single case with only slight cyanosis developing. These cases recovered. In the Lancet, No. XXII, Vol. 11, 1937, appears an article entitled "Treatment of 106 cases of Puerperal Fever by Sulphanilamide" by Colebrook and Purdie. One hundred of them were infected by haemolytic streptococci, 3 by anaerobic streptococci and 3 by staphylococci. There were 8 deaths in the group of 100 cases due to the hemolyticus streptococcus. Fifteen additional cases were subsequently reported, with no deaths, making a mortality rate in the 115 cases of 7 per cent. Of the 8 deaths the authors say that only three lived long enough for chemotherapy to have a fair trial. The mortality in 199 cases infected by hemolytic streptococci and treated by sulphanilamide since 1936 was 5.5 per cent as compared with the average of 22.8 per cent for the preceding five years. This is an amazing revelation. This report together with the rapidly growing literature on the subject leaves no doubt that sulphanilamide is a valuable contribution to the treatment of puerperal septicaemia.

DISCUSSION

DR. DAVID FINDLEY, (Omaha): The addition of sulphanilamide to the armamentarium of the physician marks one of the greatest therapeutic advances of the past decade. Although much remains to be learned of this drug the voluminous literature of the past two years indicates that, if used properly, sulphanilamide is an invaluable agent in combating disease, particularly the type caused by the beta hemolytic streptococcus. A consideration of several features of the drug is essential if satisfactory results are to be obtained.

1. Sulphanilamide is available in gr. v tablet form for oral administration and in a 2.5% aqueous solution for intramuscular or intravenous use.

2. Administration of the drug should be begun, if possible, at the onset of the infection and should be continued for several days after complete subsidence of symptoms. In event of a recurrence of symptoms therapy should be reinstated.

3. Needless to say, the dosage must be altered to suit the size and age of the patient and the severity of the infection. As a working basis the following is recommended. Sulphanilamide gr xx by mouth or 20 cc intramuscularly or half doses of both every 4 hours for 12 doses is given. Thereafter the dosage is gradually decreased until after the subsidence of symptoms.

4. Whenever feasible the drug should be given orally.

5. Generally speaking smaller doses at shorter intervals seem to give better results than larger doses at less frequent intervals.

6. Close observation of the patient for cyanosis, leukopenia or agranulocytosis must be made. If and when found the drug must be withdrawn. Numbers of deaths have been reported.

7. Coal-tar products, hydroscopic cathartics and sulphur-containing drugs and foods should be withheld while sulphanilamide is being administered, because of the dangers attending cyanosis.

8. In event of vomiting sulphanilamide should be given intramuscularly.

9. Doses gr v to gr x may be given orally each 4 to 6 hours for several days as a prophylactic measure where infection is feared, as in a prolonged dry labor, delivery after repeated vaginal examinations and ineffectual attempts at delivery.

CARDIAC CLINIC NO. VI

PREGNANCY AND RHEUMATIC (VALVULAR) HEART DISEASE

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The period of life during which a woman may become pregnant is also the period during which rheumatic heart runs its course. It is responsible for at least 90% of the heart disease complicating pregnancy. Syphlitic, hypertensive and congenital heart disease have additional important factors, besides the heart defect, which require separate consideration. Coronary artery disease usually occurs after the menopause.

The ability of a patient to stand a pregnancy is determined by establishing her cardiac capacity. It should be emphasized, that this is no different than attempting to establish this fact for other events of life, such as a surgical procedure, ability to work, ability to engage in athletics, etc. This estimate will be greatly facilitated by not losing sight of the fact that rheumatic heart disease is progressive from the time of the initial infection until death. The average course of a group recorded by De Graff & Lungg(1) show that the average age of the initial infection is seventeen years. The average onset of symptoms is twenty-eight years, followed by a period of diminished reserve lasting two years, then, seriously incapacitated for three years, resulting in death at thirty-three years. Obviously these figures cannot be applied to the individual case, but they do clearly indicate that this is a progressive malady, and that certain events are mile posts in the patient's career. The recognition of these events should determine the course to be followed in the pregnant woman. During the early symptom-free stage, pregnancy and labor are tolerated well. Permanent injury, or shortening of the individual's life need cause no concern at this stage. But with progress of the rheumatic heart disease the gravid state becomes increasingly more grave, so that with the onset of diminished capacity a definite risk is apparent, and with the onset of a definite congestive failure a 40% mortality can be anticipated.

Estimation of the functional capacity of a heart is the most difficult phase of cardiology. "The Functional Classification of Patients With Heart Disease" adopted by the American Heart Association offers a useful guide:

Class I. Patients with organic heart disease, able to carry on ordinary physical activity without discomfort.

Class II. Patients with organic heart disease, unable to carry on ordinary physical activity without discomfort.

A. Activity slightly limited.

B. Activity greatly limited.

Class III. Patients with organic heart disease, and with symptoms or signs of heart failure when at rest, unable to carry on any physical activity without discomfort. This has been used by Pardee(2)(3) in classifying pregnant patients.

While these groups are very valuable guides, experience and judgment is still necessary to properly group these patients. It should not be assumed that a few "hop, skip and jumps" will immediately indicate the proper classification, nor that the intensity of murmurs furnish any indication of the functional integrity of a heart.

Factors determining the functional cardiac capacity are:

1. Cardiac enlargement as determined by palpation, especially the apex beat, percussion or by x-ray. In general, the degree of heart enlargement and the degree of cardiac deficiency are closely parallel. An enlarged heart is never normal. However, in rheumatic heart disease the cardiac silhouette must also be scanned for changes in shape. The enlargement is not generalized early in its course.

2. Signs of congestive failure are manifested by breathlessness, cough, pulmonary basal rates, an enlarged liver and edema of the extremities. In the latter months of pregnancy, breathlessness and edema of the extremities appear without heart disease, which makes these signs less reliable.

3. The history should consist of a careful investigation of the patient's response to the ordinary activities of her life. The importance of this topic cannot be over emphasized. It must be obtained or carefully reviewed by the physician personally, and cannot be relegated to a junior. Breathlessness while performing duties, which previously did not cause it, undue fatigue and palpitation are important signs.

4. Standardized functional tests, such as climbing a certain number of steps, swinging dumb bells, etc., have some value. These tests may be influenced by extraneous factors, such as the excitement of doing the exercise, besides usually not being available when needed. Certainly, in themselves, they could not be used to properly establish the functional capacity of a heart.

5. Auricular fibrillation marks a definite milestone in the progress of rheumatic heart disease. DeGraff and Lungg(1) give five years as the duration of life after the onset of fibrillation. Obviously many fibrillators live much longer. Nevertheless it must be accepted as a definite sign of decreased cardiac capacity. If permanent it is more significant than if paroxysmal, although the latter becomes permanent in time.

The specific valvular lesions of rheumatic heart disease, in themselves, but slightly modify the course to pursue during pregnancy. The functional capacity and the stage of the disease regardless of the type of lesion indicate the method of management. The fact that patients with mitral lesions weather many congestive failures suggests that they would have a better capacity to tolerate and survive pregnancy. On the other hand, patients with aortic valvular lesions are symptom free longer than with mitral lesions, but succumb much sooner after the onset of failure, and are also more liable to die suddenly. With the onset of the signs of heart failure patients with aortic valvular lesions pass immediately from Class I to Class III. A combination of aortic and mitral lesions does not cause a summation of the effects of both, cardiac failure occurs but slightly earlier, than with either lesion existing alone.

After considering the information and facts available concerning a cardiac patient, the cardiac capacity can be no more than an estimation. Except in those which are obviously either good or bad no classification can be sufficiently secure to dogmatically indicate the course to follow in each group.

The pregnant patient with organic heart disease able to carry on ordinary physical activity without discomfort, (Class I) needs no more than the ordinary care of good obstetrical practice.

The pregnant patient with organic heart disease with symptoms and signs of heart failure when at rest and unable to carry on any physical activity without discomfort (Class III) are easily classified. Medical reasons, alone, would never justify an attempt to carry through a pregnancy under these circumstances.

The pregnant patients with organic heart disease, unable to carry on ordinary physical activity without discomfort (Class II) as a group require our most careful consideration as to management if they are to go through a pregnancy, and careful scrutiny as to the advisability of interrupting the pregnancy. There are several important indications which help determine the logical course. (1) Congestive heart failure previous to pregnancy or occurring in the first trimester of pregnancy (probably not due to pregnant state) would require competent cardiac management and, at best, the completion of the pregnancy could not be undertaken without great risk. If congestive failure occurs late in pregnancy the cardiac capacity would be better and every attempt should be to carry on until the fetus is sufficiently mature to deliver vaginally or abdominally by section.

Valvular heart disease with active rheumatic infection presents an unfavorable stage for the pregnant mother, also endocardinal infection in the fetus may occur. For this reason it seems advisable to terminate the pregnancy. As this indicates an early stage in the development of rheumatic heart disease, a more favorable time for procreation can be anticipated.

Permanent auricular fibrillation indicates a stage in the progress of rheumatic heart disease, which must be evaluated much in the same light as the onset of congestive failure, i.e. that it marks the beginning of failure. In this group (Class II) it is evident that pregnancy cannot be attempted without some risk. The desire for progeny, number of children already in the family, willingness or economic ability to co-operate in a carefully laid out medical program are important factors in deciding whether or not to attempt the completion of a pregnancy.

Sterilization of pregnant patients with cardiac disease again depends on the stage of the heart lesion. Early in the course of rheumatic heart disease (Class I) this may be done after several pregnancies. Ceasarian section and sterilization has met with considerable favor with many obstetricians and cardiologists. This attitude may also be permissable with the better members of Class II A. If the cardiac capacity is considerably restricted (Class II B) this procedure may be advisable with the first pregnancy. With marked restriction of cardiac capacity (Class III) if circumstances warranted an attempt to complete a pregnancy, and abdominal section is chosen as the preferable method of delivery, sterilization seems very desirable. In general, carrying Class III patients through a pregnancy is very precarious, and is attended by a high risk. The desirability of sterilization would not warrant adding additional risk.

In Class II B and III it would seem more feasible to sterilize the male, than subject his mate to a further hazard. The age of the individuals, number of children, the life expectancy of the female, the probability of the male far outliving his mate with the possibility of remarriage, and many other factors enter into this decision. If the couple are middle aged, and have a family of several children, sterilization of the male gives a simple, easy method of preventing future pregnancies.

Attempting to carry pregnant women with cardiac disease through pregnancy appears to have received considerable impetus, since obstetricians no longer think it necessary to have their patients take a daily five mile jaunt in preparation for this event.

SUMMARY

1. Cardiac disease complicating the pregnant state is almost entirely rheumatic heart disease.

2. The management depends on the stage of this progressive malady.

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OVARIAN CYSTS—SOME SURGICAL ASPECTS

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Because of the confusion as to types of ovarian cysts and their clinical significance, I have chosen this subject today. I shall discuss briefly these cysts under the following six headings:

1. Corpus luteum cysts.
2. Atretic follicular cysts.
3. Cystadenomas.
4. Dermoids.
5. Teratomas.
6. "Endometrial Cysts."

1. Corpus luteum cysts: A review of the development of the normal corpus luteum indicates that pathological conditions may develop in various stages of the life history of the luteal body, producing, as King(1) has pointed out, any of the following: (a) corpus luteum cysts, (b) corpus albicans cysts, (c) corpus luteum blood cysts and (d) corpus luteum tarry cysts.

(a) A corpus luteum cyst is an enlarged luteal body with clear fluid in the central cavity and festooned luteal tissue in the wall. One finds all gradations between bodies containing a little fluid and corpora up to 3 cm. in diameter.

(b) Corpus albicans cysts are diagnosed when the luteal body ages and the luteal cells disappear.

Hyaline tissue forms the cyst wall. In places in the wall luteal cells remain. These cysts are usually small.

(c) Luteal blood cysts: Hemorrhage is apt to occur into the central part of a corpus luteum when vascularization occurs. If cystic changes likewise occur, the result is a luteal blood cyst. Such cysts may be several cm. in diameter.

(d) Corpus luteum tarry cysts: As blood becomes older it becomes darker. The festooned luteum layer is present in the wall.

2. Atretic Follicular cysts: At birth there are about 300,000 follicles in the ovaries. Only about 500 mature during sexual life. The remainder undergo atresia, producing various hyaline bodies —corpus atreticum, corpus candicans and corpus fibrosum. These bodies are more numerous than the luteal bodies and cysts arising from atretic follicles are numerous. They are divided by King(1) into (a) Follicular cysts, (b) Follicular blood cysts and (c) Follicular tarry cysts.

(a) Follicular cysts are common. MacCarty(2) states that they form 36% of all ovarian cysts. Usually they are small, but may reach several cm. or even 14 cm., according to King. Seen from the surface they are faintly bluish, tense, usually unilateral and unilocular. They contain clear amber or sometimes bloody fluid and have smooth linings. The wall is formed by hyaline or fibrous tissue and the lining cells are ovoid in layers, flattened or cuboidal or even tall and cylindrical. They do not become malignant. If the theca lutein cells are still prominent in the cyst wall, it is called a theca-lutein cyst. If the granulosa cells are also overgrown we have the compound lutein cysts associated with hydatid mole or chorionepithelioma.

One must remember that normal maturing follicles may become 1.5 cm. in diameter before rupture. They have thin walls and are seen at the surface of the ovary. Neither such follicles nor the small ripening normal follicles nor the small degenerating atretic follicles should be removed by resection, as they are all physiological.

(b) In the blood cysts of follicular origin, the bleeding is usually into the theca interna cell layer and often into the surrounding ovarian tissue, while occasionally it ruptures into the cavity of the follicle.

(c) Tarry cysts are due to changes in the blood just described in the follicular blood cysts.

3. Cystadenomas: For the clinician this is perhaps the most important group. It has always been the custom to distinguish pseudomucinous and serous types according to the chemical nature of their contents, but the distinction is apparently not important, according to MacCallum(3). The pseudomucinous types contain pseudomucin and the fluid varies from slightly viscid to a dense gelatinous. The serous type contains a thin amber fluid rich in albumin. McCarty(2) classifies the cystadenomas into simple, papillary, carcinomatous and hemorrhagic. The different behavior of the pseudomucinous and serous types would seem to warrant the retention of the distinction between the two.

The pseudomucinous type is usually unilateral and may reach an enormous size, practically filling the abdomen. It is always multilocular. The tumor is often on a pedicle, rendering its removal easy. Much of the contents may be removed with a canula. The lining of the cyst is high cuboidal or columnar epithelium. Usually papillary formations are lacking, but they may be pronounced, especially in tumors which are bilateral and apt to become malignant. Sometimes a cyst perforates and pseudomucinous material is spilled into the peritoneal cavity. In rare cases the tumor cells become implanted upon the peritoneal surface, producing gelatinous masses—pseudomyxoma peritonei.

The serous type is about as common as the pseudomucinous, is uni or multilocular and frequently bilateral. Either intra or extracystic papillomata are so commonly present in these cysts that they are frequently named papillary cystadenomata. An occasional serous cyst, however, may have a perfectly smooth lining with no suggestion of papillae. Secondary papillary implants may be scattered over the peritoneal surface and associated with ascites. Microscopically the original cyst is lined by low cuboidal epithelia usually ciliated. Usually the peritoneal implants are histologically benign, although able to attach themselves to the surface. They do not tend to destroy the underlying tissue and do not metastasize outside the peritoneal cavity.

Malignant change is fairly common in the serous type of cyst. Figures by observers vary from 20 to 65%. The malignancy is usually of rather low grade and the patient may live 5 to 10 years.

MacCarty(2) has observed both papillary and solid carcinomatous involvement of tubes and uterus associated with both types of ovaries (cystadenoma with papillomas and with solid carcinomas) and as a result advocates radical removal of ovaries, tubes and uterus. In the cystadenomas with papillary peritoneal implants, such an operation plus removal of visible implants is often followed by recovery. If there is an intracystic solid adenocarcinoma the prognosis is less favorable, although the radical operation should be done if possible.

4. Dermoid Cysts: These are cysts lined by skin and its accessories, containing fatty tissue, hair and sometimes teeth, bone, thyroid, and other tissues. Often they are bilateral. They are yellowish and soft, even doughy after removal from the body. It is a one sided development of a teratoma and all gradations exist between simple dermoids and more complex teratomas. Malignancy is rare and is usually squamous cell carcinoma. Removal is usually easy.

5. Teratomas: These tumors differ from the more adult dermoids in having no large cavities containing hair, sebaceous material, definite organs or limbs. The solid teratomas usually contain small cysts and derivatives of the three germ layers. They are very rare and highly malignant.

6. Endometrial cysts: Tumors containing endometrium-like tissue are found in the uterus, over the peritoneum, in the recto-vaginal septum, in the abdominal wall in scars, at the umbilicus, on and in the ovary, and in the perineum. We are here concerned with small masses and cysts of this type found in the ovary. Sampson's(4) work has led to the designation of "endometriomata" for these cysts. King's work on ovarian cysts indicates that cysts lined by cylindrical epithelium, often hemorrhagic, can be explained by changes in follicular and luteal cysts. We must at least accept Sampson's implantation hypothesis with reservations.

Hemorrhage, recent or old, is found in several types of ovarian cysts. Tarry cysts are the results of old hemorrhage into corpus luteum, atretic follicles or cystadenoma. It is not necessary to introduce an endometrial transplant hypothesis to explain hemorrhage into any ovarian cysts.

Many hypotheses have been advanced to explain atretic follicular and corpus luteum cysts. Recent work in endocrinology would indicate a disturbance in the stimulation of the follicles by the pituitary "follicle stimulating" and "luteinizing" hormones. The most suggestive contribution is the production of large cysts in the ovaries of rodents and monkeys by injections of unfractionated extracts or implants of sheep hypophyses.

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EVALUATION OF SCOLIOSIS TREATMENT

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Judging from the overwhelming literature based on this most vexing of orthopedic problems, there has come from time to time tactical changes in the trend of investigations. If we take the fundamental labors of Lorenz(1) and Schulthess(2) as the opening of the modern era, we find them devoted to the clinical aspect of this deformity. Later in the era of Lovett(3), we see that the pathological physiology and the kinetics of this condition are the predominant problems. The last three decades constitute almost entirely an era of treatment, most of the contributions devoted to technique and results. Whereas, Lovett, Wullstein(4) and Abbott(5) developed conservative methods, the teachings of Hibbs(6) and his contemporaries conquered the field for the operative treatment and today there are surgeons who consider it the method of choice. It is regrettable that the study of scoliosis has swung from the physiological and clinical aspects to the problem of treatment before certain elementary questions had been answered, questions upon which the choice and plan of treatment must depend.

Briefly, let us describe a scoliotic deformity. Lateral curvature of the spine is most frequently seen in dorsal and dorsolumbar portions. The presence of a dorsal kyphus and lumbar lordosis complicates the lateral deviation. Consider a column or rod already bent in a form simulating a dorsal kyphus; adding a lateral deviation will always produce a rotational deformity toward the convexity. This occurs in the spine as well. Thus a right dorsal scoliosis shows the deviation to the right of the midline, a rotation of the vertebral bodies toward the right, a transference of this rotation to the ribs which causes a marked prominence at the angles of the ribs, the right thoracic wall posteriorly then being more prominent than the left which is flattened, the left anterior thoracic wall being prominent while the right is flattened to compensate for the posterior deformity; the sternum shifts toward the side of the convexity. The lateral deviation produces an overhang of the body toward the right with a compensatory shift of the pelvis to the left. The right shoulder is elevated and rotated backward. (Fig. 1).

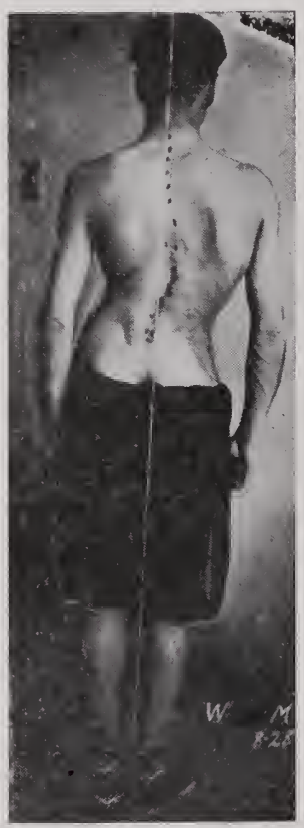

FIG. 1.
Typical scoliosis with lateral deviation, overhang, and compensatory shift of pelvis.

As a result of this deformity of the spine and thorax, the necessary shifting and crowding of the thoracic viscera is easily understood. This rearrangement produces the symptoms of decreased respiratory and cardiac efficiency in the late stage and naturally the aim of treatment is to prevent this stage.

Briefly, what are the common causes of scoliosis? Congenital anomalies of the spine as hemivertebrae or fusions are noted earliest in life, usually before the age of one year. Rachitic bony changes predispose to production of lateral deviation, especially in the low lumbar area which bears most superimposed weight. These are usually first noted at the ages of four to six years. The idiopathic or habitual scoliosis has its onset at ages eight to ten years, has a predisposition for the female sex and is fairly benign in its course. The paralytic curvature follows infantile paralysis in a period varying from one month to two years, is the most resistant to treatment and certainly the most malignant in its course as a marked increase in curvature may result several years after it had been considered adequately controlled. To these four groups which take up the majority of cases are added the less frequent types as neurogenetic, empyematic, spastic, static, etc.

In order to form an opinion as to how amenable a scoliosis would be to treatment, it is necessary to have an idea of the ordinary clinical course of a progressive scoliosis. Lorenz expressed the view that any scoliosis, once established, has an irresistibly progressive nature. This statement is just as untrue as the converse would be true. Some patients develop a spontaneous arrest or a compensation before cessation of growth. Risser(7) contended that the progress of a scoliosis deformity ceased when full growth was attained; this is fairly well substantiated by this series except for an occasional severe paralytic curve or the occasional settling of a scoliosis between third and fourth decades of life with production of osteoarthritic changes in the intervertebral articulations.

What does nature attempt in an effort to obtain normal relationship and alignment? A curvature soon loses its pliability, assuming considerable rigidity, most marked at the apex of the curve which now shows structural changes. A correction of this curve is seldom possible except in very early stages. However, the ends of the curve remain pliable for considerable periods and these nature utilizes to develop secondary countercurves above the primary curve, below it, or both; thereby converting a back with a single or "C" curve into one with a double or "S" curve or into

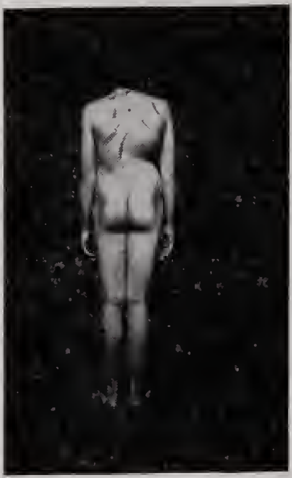

FIG. 2.
Spontaneous compensation.

a triple curve, the general relationship of the body to an imaginary plumb line then being normal; this is the spontaneous compensation previously mentioned (Fig. 2).

What is the compensation treatment of scoliosis? Since 1909, Steindler[(8)] has stressed and successfully used the combination of mobilization of the spine above and below the primary curve by exercises and manipulation, passive counter rotation of compensatory curves, assymmetrical exercises for overhang correction, and maintenance of whatever correction is obtained from time to time by a body brace with a leg extension on the adducted side. Phases of this had been previously suggested by Hohmann and by Schulthess. Such a course is tedious, long and necessitates close observation. When realignment is maintained without brace support, or when full growth has been attained without increase in curvature, the latter is gradually discarded. This follows quite closely the aim of nature in spontaneous arrest (Fig. 3).

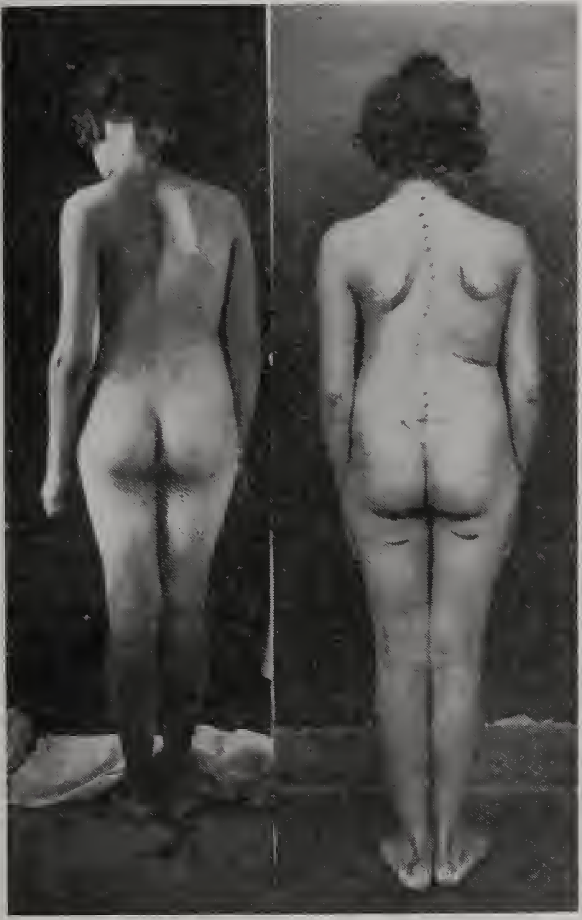

FIG. 3.
Compensation by conservative therapy.

Is such compensation necessary for control of the curve? It is easy to see that any realignment would tend to prevent an increase in the lateral deviation; should realignment be complete, the important question would be, "Is this compensation sufficient to control the curve?" It is sufficient in the habitual and mild rachitic and mild congenital cases. It is certainly not sufficient in practically all paralytic and all severe rachitic and congenital cases. Further, it will later be seen that realignment is necessary for optimal results with any type of treatment, conservative or operative.

The original report on the compensation treatment by Steindler in 1926 may be summarized by stating that complete compensation was obtained in 79% of all groups. The treatment of scoliosis at the University of Iowa at that time was largely conservative in nature and the short period of observation may have been responsible for the high percentage of good results. In comparison we now have the results of some 400 cases selected from the 1600 available cases on the basis of adequate available date to January 1, 1937, which shows the following: Compensation treatment in 243 patients showed the following good results: Congenital 28.1%, rachitic 34.6%, paralytic 22.9%, habitual 49.4%. Of 3-year observation cases, an average for all groups of 38.7% showed satisfactory results; at the 5-year period only 27.3% fell in the same category.

An explanation is necessary for the large number of failures. Since conservative treatment occupied the favored position, the tendency was to oppose promiscuous surgery and to restrict the operative indication to its apparent legitimate limits. In other words, the curvature had to prove its absolute need for fusion by failure of conservative treatment, which was entirely too late in many cases. No doubt this attitude was too optimistic. This poor showing is not due to the inferiority of the compensation method of treatment but to the error in selection of cases; furthermore, all inoperable cases naturally were charged to the conservative method.

Let us now consider the operative groups. Of 137 spinal fusions only 119 had previous compensation or realignment either by the compensation method or by the forceful turnbuckle cast correction of Risser (Fig. 4). Of 107 patients treated by spinal fusion following compensation treatment, the following good results were obtained: Congenital 80%, rachitic 75%, paralytic 75.4%, habitual 88.9%. Of 3-year observation cases, an average for all groups of 84.2% good results was obtained; at the 5-year period, only 76.5% fell in the same category. Twelve patients corrected before operation by the Risser cast showed 80% good results at the 3-year period, and 80% at the 5-year period. Of 18 patients treated by fusion with no preparatory realignment, 85% good results at the 3-year period dropped to 25% at the 5-year period. The first two groups receiving preoperative realignment, therefore, yielded the best results; namely, good in 75% while failure to realign the spine before fusion showed only 25% good results—a poorer showing than compensation treatment alone. This adequately illustrates the need for realignment under either type of treatment, conservative or surgical.

If the surgical treatment of scoliosis were the ideal solution the problem would be solved. But it is evident that a stiff spine is only the lesser of two evils, a necessary evil until a better solution is evident. The ideal solution of scoliosis lies in its prophylaxis—that is recognition of scoliosis possibilities in early years. It is seldom, indeed, that a true incipient scoliosis is seen on an orthopedic service. Certainly any paralytic patient should be carefully observed if any back or abdominal paralysis or weakness is present(8).

Thus it is not a question of conservative versus operative treatment of scoliosis or vice versa; the problems must always be one of the individual case. From this series of 1600 cases, we may conclude that (1) realignment or compensation of a curvature is essential to any type of treatment; (2) when conditions are favorable, that is compensation and muscle development are satisfactory, the curvature may be controlled by conservative means in 30 to 40% of properly selected cases; this applies to almost all habitual, all mild rachitic and congenital, practically none of the paralytic cases; (3) when conditions are less favorable, operative fusion in good position is necessary; this applies to practically all paralytic, all severe congenital and rachitic and to few habitual cases.

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INTRADERMAL IMMUNIZATION

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Numerous attempts have been made to obtain the effective results of typhoid and diphtheria immunization by methods other than the usual subcutaneous and intramuscular inoculation, in order to eliminate the local and constitutional disturbances which occasionally follow the procedure. Oral administration probably would be the most desirable method but no oral vaccine has been developed which has proven to be as effective as the parenteral vaccine. Other methods, such as the percutaneous administration of the vaccine, have not proven efficacious. Intradermal introduction of the vaccine is the only modification of the present method of typhoid and diphtheria immunization which has given promise of reducing the severity of the local and systemic reactions, and at the same time, producing an antibody response comparable to the usual subcutaneous methods.

Tuft, Yagle and Rogers(1) reviewed the literature up to 1932 on the various methods of typhoid immunization, and compared the rise in agglutinin titer by these methods. They considered the intradermal injection of the vaccine to give a uniformly better and more persistent response than the subcutaneous, intramuscular, intravenous or oral administration. Valentine, Park, Falk and McGuire(2) also studied the increase in agglutinin titer following various methods of typhoid immunization, and suggested greater use of the intradermal method. Kern, Crump and Cope(3) employed the intradermal method in immunizing with alum-precipitated diphtheria toxoid. They concluded that this was the method of choice, especially in allergic subjects.

EXPERIMENTAL

This investigation was undertaken in connection with the program of immunizing medical students against typhoid and diphtheria. The antigens used were the regular stock products of a biological house. Alum-precipitated diphtheria toxoid, and a vaccine mixture of typhoid, paratyphoid A and paratyphoid B were used.

In carrying out the typhoid immunization, 84 students received three subcutaneous inoculations of the mixed TAB vaccine at weekly intervals, the respective dosages being: 500 million, 1,000 million, and 1,000 million typhoid organisms; and 250 million, 500 million, and 500 million each of paratyphoid A and B. Another group of 77 students was given one-tenth the above amounts, intradermally, at weekly intervals. In each group, blood specimens were collected before the first inoculation, and 30 days following the third. Microscopic Widal reactions and tests for somatic and flagellar agglutinins were run on each sample, using as antigens proper preparations of each of the three organisms.

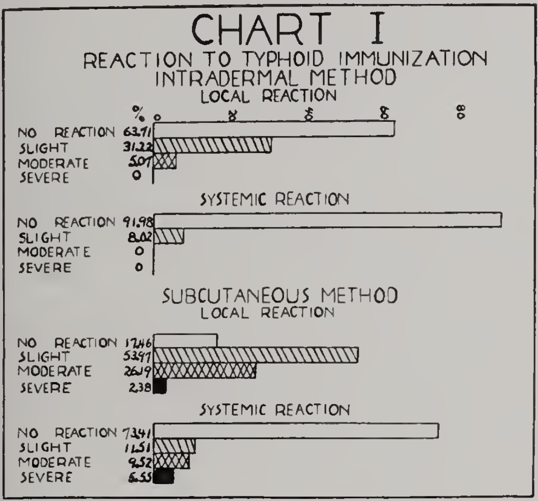
CHART I
REACTION TO TYPHOID IMMUNIZATION

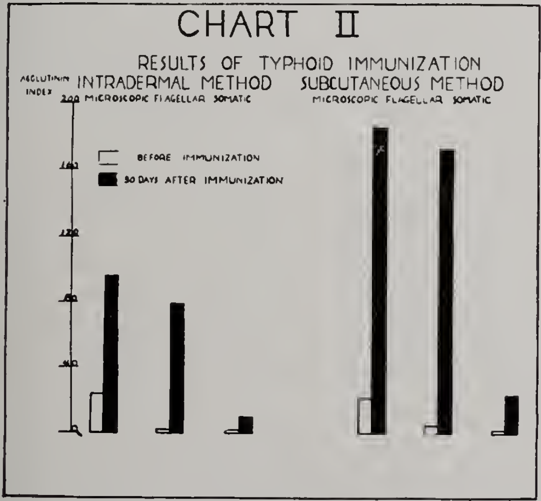
CHART II
RESULTS OF TYPHOID IMMUNIZATION

Reactions were classified as local and systemic and were graded as negative, slight, moderate and severe. Degrees of reactions in the two groups are shown in Chart I.

The rise of agglutinin titers, as shown by the reactions of the sera with H and O antigens, was checked microscopically 30 days after the last injection. The antigens were prepared according to the methods of Gilbert, Coleman and Laviano,(4) and Mudd,(5) respectively. Microscopic Widal reactions were done at the same time. To allow a graphic presentation of the results a value was assigned to each sera corresponding to the reciprocal of the highest dilution showing 25-50% agglutination. The average of these was plotted in the graphic form shown in Chart II. This value will be referred to later as the "agglutinin index."

Eighty students received a single dose of 0.5 c.c. of alum-precipitated diphtheria toxoid subcutaneously, and 64 students received 0.1 c.c. intradermally. Schick tests were run preceding the inoculations and 15 weeks following, in both groups. The severity of local and systemic reactions is shown in Chart III. The results of Schick tests following the immunization of Schick positive individuals are given in percentage form in Chart IV.

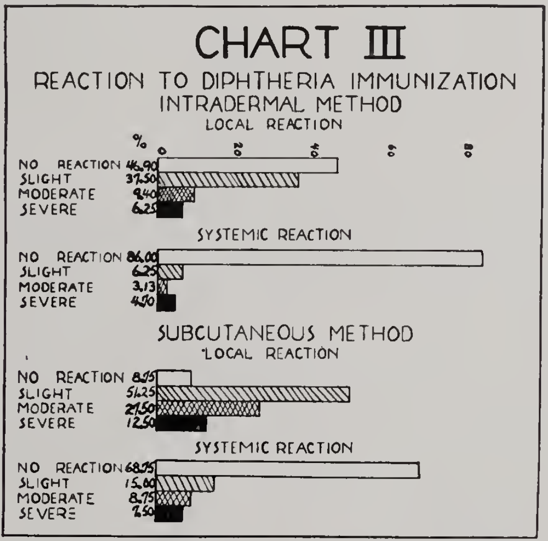
CHART III
REACTION TO DIPHTHERIA IMMUNIZATION

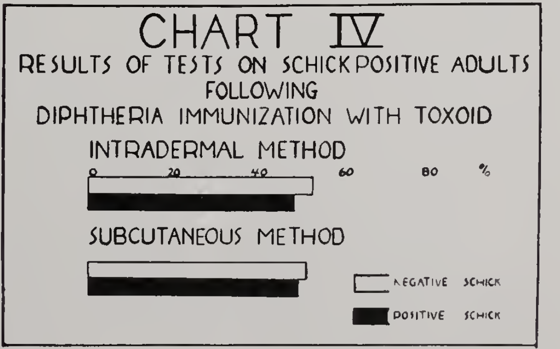
CHART IV
RESULTS OF TESTS ON SCHICK POSITIVE ADULTS FOLLOWING DIPHTHERIA IMMUNIZATION WITH TOXOID

Following the typhoid immunization, the reactions were definitely less marked in the group receiving the intradermal inoculation. This was especially true in the case of the systemic reactions, as can be seen from the absence of any moderate or severe reactions in that group, contrasted with 15% in the group given the vaccine subcutaneously.

Expressed in terms of agglutinin index, the subcutaneous method showed approximately twice the antibody response of the intradermal method. This was true of the flagellar and somatic reactions as well as the microscopic agglutinations. As can be seen from Chart II, the agglutinin indices in the intradermal group, when tested microscopically, increased from an initial average of 24, to 96, following the course of immunization, while in the subcutaneous group, the increase was from 22 to 186. When tested with the somatic antigen, the intradermal group showed an increase in agglutinin index from 2 to 10, and the subcutaneous, from 2 to 25. With the flagellar antigen, the intradermal group increased from 4 to 79, and the subcutaneous, from 5 to 173. As can be seen, the different agglutinins present before immunization were practically the same in both groups. Certain members of both groups had been vaccinated previously. Separation of these groups into vaccinated and unvaccinated, although giving higher titers in those previously vaccinated, showed the same relative increase in titer following vaccination.

As can be seen from Chart III, 40% of the group receiving the diphtheria toxoid subcutaneously showed moderate or severe local reactions, and 16% had systemic reactions of similar intensity. Of the intradermal group, only 15.7% showed moderate or severe local reactions, and 7.8%, corresponding systemic reactions. Following the subcutaneous introduction of the toxoid, 8.75% of the subjects showed no local reactions, and 68.75%, no systemic reaction, as contrasted with 46.9%, and 86%, respectively, for the intradermal group.

Of the 80 students who were given 0.5 c.c. of alum-precipitated toxoid subcutaneously, 49 had shown positive Schick tests prior to inoculation. and 52 of the 64 students receiving 0.1 c.c. of the toxoid intradermally had been Schick positive. When retested 15 weeks after immunization, 24 or 47% of the subcutaneous group, and 25, or 48% of the intradermal group still remained positive; while 25, or 53% of the subcutaneous, and 27, or 52% of the intradermal group had become Schick negative, showing practically equal efficacy of the two methods in producing negative Schick reactions.

Following the intradermal toxoid administration in susceptible individuals, a brownish discoloration of the skin, similar to that produced by a positive Schick reaction, persists for several months.

DISCUSSION

In the case of the diphtheria immunization, it would seem that the intradermal administration of one-fifth of the regular subcutaneous dose of alum-precipitated toxoid is as effective in producing negative Schick tests as the regular method, and as it was is followed in the adults tested by definitely fewer reactions than the subcutaneous method.

The results of the typhoid immunization suggest that the vaccine might be improved for intradermal use by increasing the quantity, (or quality), of antigen. Since the amount used in the intradermal method was only one-tenth that used subcutaneously, it might be advantageous to double the dose administered since reactions in the intradermal group were definitely less severe than in the subcutaneous group. In view of the recent work of Felix and his co-workers(6), it might be desirable to use a product containing a larger proportion of Vi antigen. Dennis and Berberian(7) have shown that freshly prepared vaccine gave a greater antibody response than the older preparations, so shortening the time interval between the manufacture and the use of the vaccine might be advantageous.

SUMMARY AND CONCLUSIONS

Intradermal introduction of alum-precipitated diphtheria toxoid gave results equally as satisfactory as the subcutaneous administration, with fewer local and systemic reactions.

As used in this experiment, TAB vaccine given intradermally did not produce results as satisfactory as the subcutaneous method. It is suggested that an improvement of the antigen content of the vaccine for intradermal use might make this method equally as effective as the present subcutaneous methods, with fewer undesirable reactions.

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UNUSUAL FORM OF VASCULAR IMPAIRMENT IN SCARLET FEVER

(Munchener medizinische Wochenschrift, Munich, Sept. 10, 1937). Zischinsky recently reported three cases of nonnephritic edema after scarlet fever. In one of the patients, cutaneous hemorrhages developed and, on the basis of this case, the disorder was considered to be a form of vascular impairment. The present report about this relatively rare complication of scarlet fever was occasioned by the observation of another case and by the fact that the author's attention had been called to earlier reports on this condition. It has been pointed out to him that Quincke as early as 1882 described simple dropsy in scarlet fever and in 1906 the same author described observations on toxic dropsy in scarlet fever. Zischinsky thinks that his observations and those reported by Quincke are identical, although Quincke fails to mention cutaneous hemorrhages. After reviewing other reports from the earlier literature of dropsy after scarlet fever, the author suggests that the absence of reports about this form of vascular changes from the recent literature does not mean that such cases did not occur but rather that they were overlooked or incorrectly interpreted.—*Journal A. M. A.*

FUNCTIONAL SYSTOLIC MURMUR IN PULMONARY ARTERY IN CHILDREN

(Semana Medica, Buenos Aires, Sept. 23, 1937). Diaz Nielsen states that in some children with a normal cardiovascular apparatus a functional systolic cardiovascular murmur can be heard by auscultation over the pulmonary artery in the second or third left intercostal space. The murmur does not propagate. Its duration and intensity vary with individual conditions, especially those which result in increasing the velocity of circulation. The murmur is different from pathologic murmurs. It originates in a predominant functional factor. The organic factor, although of lesser importance, has to exist in association with the functional one in order to cause the murmur. The author found the murmur in eleven children with normal cardiovascular apparatus. Teleroentgenography was performed in eight cases and radioscopy in three cases. Electrocardiograms were taken in all cases. The time of velocity of circulation was determined in all cases by the dehydrochloric acid test. The average velocity of circulation was eleven seconds in a group of normal children and nine seconds in those who had functional murmurs. The author found that the systolic functional murmur is directly related to the increased velocity of circulation. It originates in the existence of a narrow infundibulum of the pulmonary artery. The growth of children improves the organic condition related to the infundibular abnormality; this results in a diminution of the functional disorder and, in many cases, in permanent disappearance of the murmur.—*Journal A. M. A.*

"EXPECTANT FATHERS"

The sufferings of "expectant fathers" have long been a source of innocent merriment to newspaper paragraphers and gag writers. To doctors, nurses and hospital orderlies, however, they are probably more of a nuisance than of comic relief to the miracle of birth.

We suspect therefore that the apparent concern of the Western Hospital association for the poor fellow has behind it more of a purpose to get him out of the way than to alleviate his pain. Under the pretext of giving him "homey" surroundings in which to do his worrying the idea seems to put him in an isolation ward where he will be out of the way. He is to have comfort and privacy and soothing colors on the walls, but what he needs is a shot of chloroform.

Objection has been raised to medical devices for easing the labor pains of mothers on the ground that it is unscriptural and therefore immoral. No such objection can be raised to administering the twilight sleep treatment to "expectant fathers."—*From World-Herald Editorial.*

A doctor reports that beer averts seasickness. Many people can testify that after a few drinks you even get to like the foam.

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HOUSE OF DELEGATES TO CONVENE AT 1 P. M., MONDAY, APRIL 25, 1938

Due to the unusual amount of work to come before the House of Delegates in connection with the proposed revision of the Constitution and By-Laws, this body will convene at the Cornhusker Hotel, Lincoln, Nebraska, at 1 p. m., April 25, 1938.

A copy of these proposed amendments appears elsewhere in this issue of the Journal. It is urged that every member of the House thoroughly familiarize himself with the proposed changes and be present at the opening session.

R. W. FOUTS, President.

ALL ROADS LEAD TO LINCOLN

This month the Annual Assembly of the Nebraska State Medical Association will be held in the Capitol City. The dates are April 26, 27, 28. Aside from the excellence of the scientific papers and the various interesting exhibits, the 1938 meeting is of unusual significance. First there is the new Constitution and By-Laws to be considered by the House of Delegates—a document of utmost importance in the future history of the Association. In addition there are many significant problems of a sociological and professional nature which must occupy the attention of every physician in the State. Nebraska is going forward in public health and it is the duty of individual practitioner to familiarize himself with the newer activities in which he must, for his own good and that of his patients, play a constructive part.

The National political scene is neither clear nor encouraging. What with official and unofficial committees advising with recognized and unrecognized subcommittees which in turn counsel with other official and unofficial groups and individuals ever in readiness to issue official and unofficial reports in the usual noncommital, evasive fashion, no one to our knowledge, could consider himself wise enough to predict anything definite. Physicians however will do well to watch carefully the direction of the changing social winds and stand in readiness for helpful leadership in their respective communities. We realize that this is "old stuff," yet in view of possibilities not too remote, we feel it our duty to repeat the exhortation even at the risk of criticism. We must remain vigilant even if we ourselves abhor alarmists.

One of the major interests of every Annual Assembly centers around the facilities for the exchange of ideas on problems of mutual concern. We enjoy meeting friends and classmates, and at the same time make new acquaintances among our colleagues. And a short break of the daily grind so far as we are aware, has never done any one harm, especially when pleasure may be combined with new acquisitions.

Let us set a new record in 1938. Let us all come to Lincoln.

TO THE MEMBERS OF THE HOUSE OF DELEGATES:

Gentlemen:

On page 148 of this issue of the Journal is the proposed revision of the Constitution and By-Laws of the Nebraska State Medical Association. The Committee to whom the task of revision was assigned has put in many days and nights in an attempt to present for your consideration a document which in the judgment of this group will serve best the interests of the Association. The Committee had counseled with many of the maturer members of the Association, and in the final copy many suggestions from that source were included.

Because the size of our membership makes it impractical for each one to cast an individual vote on the policies of the Association, you have been chosen by your respective County Medical Societies to represent your constituents, to act as their spokesmen on methods and procedures dealing with administrative functions. Upon you therefore rests the responsibility for the future of the Organization. Please read the New Constitution with equanimity and care. Your duties to your colleagues will be honorably fulfilled only when you vote in accordance with judgment based on diligent study and unbiased conclusions.

THE APRIL MEETING

The work of the Program Committee for the 1938 session is completed and in this issue appears in detail the Program for the April meeting. Your committee has made every possible effort to secure a diversified series of subjects to be presented.

The advance of Modern Medicine makes it imperative that we acquaint ourselves with its progress, and only by constant study and attendance upon our State Meeting can we hope to keep abreast with its forward stride. A free interchange of experiences is afforded us by associating with our fellows, and it stands one in hand to take advantage thereof whenever possible.

Much time and effort has been spent in securing an array of able speakers, who by reason of their experience will be able to instruct us. The success of our meeting depends upon the attendance of our members.

Your committee trusts you will study the program and decide to attend. The scientific exhibits this year promise to be very interesting and instructive. The local committee on arrangements have been especially active in this important part of the program. The contemplated change in the Constitution and By-Laws is a subject of much importance, and should merit the attendance of those who wish to keep in touch with the activities of our Association.

Besides getting away from the daily grind, this Meeting offers many educational advantages that cannot be acquired in any other manner. It is incumbent upon those who want to know what is going on to attend.

—Morris Nielsen, Program Committee.

An amateur doctor tells us that a little whiskey and honey is good for a cold in the chest but one of our friends tells us he tried this remedy with disastrous results. He was arrested for speeding and driving while intoxicated, his wife is suing him for divorce and his honey is suing him for breach of promise.

EDITORIAL PARAGRAPHS

The normal adult requires 0.45 grams of calcium per day, with an optimum of 0.7 gms. During the last trimester of pregnancy the requirements are increased to 1.5 grams per day.

A recent study of the efficacy of the gonadotropic principle in the treatment of cryptorchidism by Bigler and his associates showed that 40% of the testes descended, but only 25% remained in the scrotum after such descent.

The peak maternal age in the general population of this country is around 24. Bleyer analyzing the ages of 2,822 mothers producing mongoloid imbeciles found the peak age for this unfortunate group to be 41. The role of advanced maternal age in causing mongolism is undeniable.

"The Doctor Himself as a Therapeutic Agent" by Dr. W. R. Houston of Austin, Texas, is one of the most outstanding papers of recent years depicting the "Art" phase of medical practice. With a comprehensiveness equalled only by its delightful literary style, the phrase "Personal Relationship Between Doctor and Patient" assumes tangible meaning. The paper is worthy of attention from every doctor. It may be read in the Annals of Internal Medicine for February, 1938.

NEWS AND VIEWS

Under the auspices of the Omaha-Douglas County Health Council and the Omaha-Douglas County Medical Society National Social Hygiene Day was observed in Omaha Thursday, Feb. 18. Dr. James E. Faris, of the U. S. Health Service addressed a lay audience in the Medical Arts Auditorium on "Syphilis, The Menace to the Community."

* * * * * *

According to the Fremont Tribune, the medical group of Fremont and the hospital joined the Credit Bureau, and agreed to clearing their accounts through the Bureau. "In order that the professional men and women may have accurate information, their books will be audited by the Credit Bureau this month."

* * * * * *

A Red Cross First-Aid program is being developed in Fremont, with Dr. H. H. Morrow in charge of activities. The Red Cross has always cooperated with local medical organizations.

* * * * * *

A District Health Unit is being established in Richardson and Pawnee Counties with prospective headquarters in Falls City. The Unit is sponsored by the two Counties with the practical aid coming from the Nebraska State Health Department, the Medical Societies supplying cooperating advisory Committees. Dr. J. T. Googe is directing the project.

* * * * * *

We note with pride that several columns of space was devoted by the Blair Enterprise to the life of a respected physician following 47 years service in the community. Dr. E. R. Stewart is said to have officiated at not less than eighteen hundred births.

* * * * * *

Our congratulations go to Dr. J. A. Weggener of Humboldt. The doctor last month celebrated his eighty-fifth birthday, and his sixty-second year in medical practice. May the blessings of good health and an active life continue.

* * * * * *

The Junior Chamber of Commerce of Hastings in cooperation with the Adams County Medical Society has launched a campaign against syphilis. The campaign was opened early in March. A meeting held at the Alexander hotel was addressed by Dr. Juul C. Nielsen and Dr. George L. Pinney, representatives of the medical society. The speakers wisely emphasized the fact that while the Wassermann test is an important criterion in the diagnosis of the disease, it is not by any means the infallible procedure to establish or rule out the diagnosis of syphilis. A complete physical examination is necessary to establish the presence or the absence of the infection.

* * * * * *

Dr. E. C. Henry of Omaha celebrated his sixty-eighth birthday March 12. He was honored at a luncheon given by friends who were associated with him in the Lord Lister Hospital. On March 14, Dr. Henry received additional citation as the "oldest member" of the Omaha Y. M. C. A.

EXCERPTS FROM THE CONFERENCE ON BETTER CARE FOR MOTHERS AND BABIES

Washington, D. C., Jan. 17 and 18, 1938

The Number of Births, and where they occur

There are more than two million babies born each year in the United States.

Approximately one million babies are born each year to families on relief or with an annual income of less than $1,000. Of this million births, around 840,000 of them occur in families which are on relief or have total incomes, including home produce, or less than $750 a year.

In 1936, nearly 900,000 births or 2/5 of the total occurred in hospitals, but midwives still deliver 250,000 women every year.

The number of deaths connected with childbirth

In 1936, 12,182 mothers died in childbirth, a maternal mortality rate of 5.7 for each 1,000 live births.

In addition over 8,000 women lost their lives from abortion.

More than 60,000 babies died within two weeks of birth and there were 77,119 recorded stillbirths.

In other words, there occur in the country each year, more than 150,000 deaths, 60% of which are needlessly lost because of society's mismanagement of the childbearing function.

It should be remembered that childbirth ranks third as the cause of death in women between 15 and 44 years of age. In order of frequency, the chief causes of death of these women are (1) tuberculosis, (2) diseases of heart, (3) puerperal causes, (4) malignant diseases, (5) pneumonia and nephritis. This information may be verified in "Mortality Statistics of 1934," published by the U. S. Government Printing office in Feb., 1937.

There has been little reduction in the maternal mortality rate during the 22 years for which records are available. The death rate from toxemias of pregnancy shows a tendency to decline, but there is no camparable reduction in the death rate from puerperal sepsis, or hemorrhage in the country at large.

Committees of physicians in many parts of the country, after careful evaluation of the causes of death of individual mothers, are reporting that from one-half to two-thirds of maternal deaths are preventable.

Dr. P. H. Bartholomew, our acting Director of Health, attended this conference in Washington. Dr. Bartholomew also has the responsibility for expending some $48,000 of Maternal and Child Health funds in Nebraska. In a future number of the Journal Dr. Batholomew will show how these funds are used in promoting Maternal and Child Health activities in Nebraska.

Dr. Otto Johannes, ship's physician on the liner Gerolstein, claims that a person who drinks a full glass of beer before breakfast each morning is immune to seasickness. Without really having tried it anyone would think that the person who can do that is immune to everything but gunshot wounds and being kicked by an ostrich.

WOMAN'S AUXILIARY, NEBRASKA STATE MEDICAL ASSOCIATION

Dear Doctors' Wives:

As chairman of the State Medical Convention Committee of the Woman's Auxiliary, I take this opportunity of extending to you a personal invitation to attend the program planned for your pleasure in connection with the State Medical Convention to be held in Lincoln, April 25-28. The annual business meeting, held at 9 A. M. on Wednesday, April 27th, at the Hotel Cornhusker, will be of special interest to you.

Sincerely,
Mrs. Allan Campbell.

ANNOUNCEMENTS

The Oliver Wendell Holmes Committee is eager to compile the record for the current year in order to make the trophy presentation to the Councillor District with the lowest maternal mortality. Presentation is made at the Annual Assembly. Won't you please complete your blanks and forward them immediately to the office of this Committee. Dr. L. O. Hoffman, Chairman, 1120 Medical Arts Bldg., Omaha.

* * * * * *

The Nebraska Tuberculosis Association will have a luncheon at the Y. W. C. A., Lincoln, Monday, April 25. Dr. James M. Reinhardt will talk on "The Cost of Tuberculosis." The evening meeting will be held at the University Club, Lincoln, at which time Dr. W. W. Bauer of the American Medical Association will be guest speaker. His topic is "Where Do We Go From Here." Following this meeting there will be election of officers of the Association.

EXAMINATIONS—AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The general oral, clinical and pathological examinations for all candidates (Groups A and B) will be conducted by the entire Board, meeting in San Francisco, California, on June 13 and 14, 1938, immediately prior to the meeting of the American Medical Association.

Application for admission to the June, 1938, Group A examinations must be on an official application form and filed in the Secretary's Office before April 1, 1938.

The annual informal Dinner and General Meeting of the Board will be held at the Palace Hotel, San Francisco, on Wednesday evening, June 15, 1938, at seven o'clock. Dr. William D. Cutter, Secretary of the Council on Medical Education and Hospitals of the American Medical Association, will be the guest speaker, and the Diplomates certified at the preceding days' examinations will be introduced individually. All Diplomates are invited to attend the dinner meeting, and to bring as guests their wives and any persons interested in the work of the Board.

For further information and application blanks address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburg (6), Pennsylvania.

ANNUAL SPRING CLINIC OF THE ST. JOSEPH CLINICAL SOCIETY

The St. Joseph Clinical Society will inaugurate its seventh annual spring clinic on April 13th and 14th, at the Hotel Robideaux, St. Joseph, Mo. There will be no registration fee. The purpose of the meeting is to offer a concentrated postgraduate course in recent advances in clinical medicine and surgery in subjects of interest to the general practitioner as interpreted by eminent clinicians in their respective fields. To date 51 honored guest speakers, representing leaders of the profession in the mid-west have taken part in the programs. The present list of guest speakers present an especially attractive series of clinical lectures. Two luncheons and banquets are reserved for relaxation and entertainment. The St. Joseph Society extends a cordial invitation to all members of the medical profession who may wish to attend this clinical meeting.

PROGRAM

Wednesday, April 13, 1938

9:00 a. m.—Registration and Motion Pictures on a variety of subjects.

10:30—"Advances in X-ray and Radium Therapy" —James O'Donoghue, M. D., St. Joseph, Mo.

11:00—"Treatment of Acidosis in Renal Insufficiency"—Roger Deakin, M. D., St. Louis, Mo.

12:00—Noon Luncheon. "Travelogue to Guatemala" —Earnest Sachs, M. D., St. Louis, Mo.

2:00 p. m.—"Cancer of the Colon and Rectum"—Robert D. Alexander, M. D., St. Louis, Mo.

3:00—"Brain Tumor"—Earnest Sachs, M. D.

4:00—"New Clinical and Laboratory Concepts of Hyperthyroidism"—Ralph V. Byrne, M. D., St. Joseph, Mo.

4:30—"Hypertension of the Menopause"—T. L. Howden, M. D., St. Joseph, Mo.

6:00—Banquet—Joint Meeting with the Buchanan County Medical Society. "Birth Injuries"—Hugo Ehrenfest, M. D., St. Louis, Mo. "Intracranial Hemorrhage of the New-Born"—Clifford Grulee, M. D., Chicago, Ill.

Thursday, April 14, 1,38

9:00 a. m.—Registration and Motion Pictures.

10:00—"Eye Injuries"—Robert S. Minton, M. D., St. Joseph, Mo.

10:30—"Cancer of the Breast"—Thomas G. Orr, M. D., Kansas City, Mo.

11:15—"Advances in the Treatment of Biliary Tract Disease"—R. Russell Best, M. D., Omaha, Nebraska.

12:00—Luncheon—with Special Entertainment.

2:00 p. m.—"Intestinal Obstruction"—W. H. Cole, M. D., Chicago, Ill.

2:30—"Still Births and Neo-Natal Mortality"—Hugo Ehrenfest, M. D.

3:30—"The Diagnosis and Treatment of Peripheral Vascular Disease"—Horace M. Korns, M. D., Iowa City, Iowa.

4:15—"The Diagnosis and Treatment of Endocrine Disorders"—Henry H. Turner, M. D., Oklahoma City, Oklahoma.

6:00—Banquet. "Pancreatitis" — Warner H. Cole, M. D.

REVISED CONSTITUTION

The Nebraska State Medical Association

Article I—Name

The name and title of this organization shall be the Nebraska State Medical Association.

Article II—Purposes

The purposes of this Association are to bring into one compact organization the entire medical profession of the State of Nebraska and to unite with similar societies of other states to form the American Medical Association; to promote the science and art of medicine; to elevate the standard of medical education; and to promote public health.

Article III—Component Societies

Section 1—Component Societies shall consist of those County and District Medical Societies which now or may hereafter from time to time hold charters from this Association. Only one Component Society shall be chartered in any one county of the State. When in the judgment of the House of Delegates it is deemed to be for the best interests of this Association, a charter may be granted to a Component Society comprising two or more counties.

Section 2—Counties having five or more eligible physicians may form County Medical Societies, and in counties where fewer than five physicians reside, or when it is found more practicable, eligible physicians may join with the neighboring county or counties in the formation of a Component Medical Society.

Section 3—The State of Nebraska shall be divided into twelve Councillor Districts, so arranged geographically as to promote the best interests of the membership of this Association; such Districts to be comprised exclusively of component County Societies as provided for in by-laws enacted hereunder.

Article IV—Membership

Section 1—Membership in this Association shall include only those who are members of a Component Society, the qualifications for which shall be determined as provided for in by-laws enacted hereunder.

Section 2—The members of this Association shall be classified as Active Members and Honorary Members.

Section 3—Active Members shall be classified as (a) Members, who are in good standing of the component County Societies and (b) Junior Members, who are Internes in recognized hospitals in Nebraska, and who hold the degree of Doctor of Medicine, and (c) Associate Members, who are physicians holding the degree of Doctor of Medicine, and who are in the service of the Federal Government and residing in the State of Nebraska.

Section 4—Honorary Membership includes; (a) Members, who may have rendered extraordinarily outstanding service to the Profession and to the Association, and (b) Members, who have retired from active practice and reside in Nebraska.

Article V—House of Delegates

Section 1—The House of Delegates shall be the legislative body of the Association, and shall consist of (1) Delegates elected by the component County Societies, and (2) The officers of the Association as defined in this Constitution, and all ex-presidents residing and practicing medicine in this state, ex-officio, without the power to vote.

Section 2—The House of Delegates shall be presided over by a Speaker; or a Vice-Speaker, who shall preside in the Speaker's absence. They shall be members in good standing of this Association.

Section 3—The House of Delegates, by a two-thirds vote of all members of the House registered at that Annual Assembly or Special Meeting, may remove any officer of the Association from his office for cause deemed by the House sufficient, upon impeachment by the Board of Councillors; provided, that impeachment of the members of the Board of Councillors may be brought to the House of Delegates by the Board of Trustees.

Section 4—The House of Delegates shall be the final judge of the qualifications of its own members.

Article VI—Assemblies and Meetings

Section 1—The Association shall hold an Annual Assembly, during which there shall be held daily meetings, which shall be open to all registered members and guests.

Section 2—The time for holding each Annual Assembly shall be the first week in May, provided however that upon proper recommendation of the Committee on Scientific Assembly, showing the above date to be subversive to the welfare of the Association, the Council may change the date of such Assembly.

Section 3—The place for holding each next ensuing Annual Assembly shall be decided upon by the House of Delegates on the final day of any given Annual Assembly.

Section 4—Special Meetings may be held in accordance with By-Laws enacted hereunder.

Article VII—Officers and Boards

Section 1—The Constitutional Officers of this Association shall be, a President, a President-elect, two Vice-Presidents, a Secretary-Treasurer, a Speaker and Vice-Speaker of the House of Delegates, four Trustees, twelve Councillors, and the Delegates to the American Medical Association. All officers, regardless of terms of office, shall serve until their successors have been elected and installed.

Section 2—The President-elect shall assume office as such immediately upon his election by the House of Delegates, and shall become President on the first day of the next Annual Assembly. Vice-Presidents shall be elected by the House of Delegates for terms of one year each, assuming office immediately upon election. The twelve Councillors shall be elected by the House of Delegates for terms of three years each, being divided into classes so that four shall be elected each year, and no Councillor shall serve more than three terms as such. The Speaker and Vice-Speaker of the House shall be elected by the House of Delegates for a term of three years. The Secretary-Treasurer shall be elected by the Council for terms of three years each. The four Trustees shall be elected by the Council for terms of four years each, so arranged that the term of one of these officers shall expire each year. The Delegates to the American Medical Association, and an Alternate for each, shall be elected for such terms and in such numbers as the American Medical Association may in its constitution and by-laws prescribe.

Section 3—The Board of Councillors shall be composed of twelve duly elected Councillors, one from each Councillor District, the President, the President-elect, and the immediate Past President of the Association. The nomination of candidates for the office of Councillor in any Councillor District shall be made by the members of the Councillor District Society at its last regular meeting preceding the Annual Assembly of the Nebraska State Medical Association, such nomination or nominations shall be certified to the House of Delegates of the Nebraska State Medical Association by the Secretary and President of said Councillor District Society which shall cause said nomination or nominations to be presented as prescribed in the election routine for other officers. If no nomination be made to the House of Delegates, by any Councillor Districts as heretofore described, then shall the nomination of a Councillor for that given District occur in the manner prescribed for other officers of the Association to be elected by the House of Delegates, in the by-laws enacted hereunder. The Board of Councillors shall exercise supreme judicial powers of the Association, and shall exercise such other authority as may be further prescribed in by-laws enacted hereunder. The Council may employ an Executive Secretary whose duties shall be set forth in by-laws enacted hereunder.

Section 4—The Board of Trustees shall be composed of the Secretary-Treasurer and four members elected by the Council. No member of the Council during his tenure as a Councillor may be eligible to election to the Board of Trustees. The Board of Trustees shall have direct charge of the employees, the property, and the financial affairs of the Association, subject to general instructions from the Board of Councillors, and shall perform such duties as are prescribed by law governing directors of corporations, and shall transact the business affairs of the Association during the interim between annual sessions of the Council.

Section 5—The officers shall be elected on the morning of the last day of each Annual Assembly, and all officers except the President shall be installed on that same day. By-laws enacted hereunder shall determine the methods of nomination and election, and shall prescribe procedures for the installation of all officers.

Section 6—No Delegate shall be eligible to any office named in the preceding sections, except that of Councillor, and no person shall be elected to any office, who is not in attendance upon that Annual Assembly, and who has not been a member of the Association for the immediate past three years last preceding his nomination.

Article VIII—Funds and Property

Section 1—Funds for meeting the expenses of the Association shall be raised by annual per capita assessment upon each Component Society, which assessments shall be equal for all persons within any given classification for membership to be fixed by by-laws enacted hereunder. Funds may be raised from the Association's publications, by voluntary contribution, and in any other manner approved by the House of Delegates.

Section 2—Funds available for appropriations may be appropriated by the House of Delegates to defray the expenses of the Annual Assembly, for the benefit of the Association, for publications, and for such purposes as will promote the welfare of the Association and the profession, or the general public health; provided, however, that all funds of the Association shall be expended only under the supervision of the Council through the Board of Trustees, and that all commitments for expenditures shall be approved first by the Board of Trustees. The Council shall, through the Board of Trustees, submit an annual budget to the House of Delegates for the ordinary expenses of the Association, which shall take precedence over all other resolutions providing for appropriations. All resolutions for appropriations shall be referred to the Council, and the Board of Trustees at least twenty-four hours before final action is taken.

Section 3—No interest in any of the properties of this Association shall be held by any person or persons other than Active Members in good standing in the Association, and the interest of Active Members shall cease when such Active Member no longer holds membership in the Association for whatsoever cause, such cessation of membership shall operate as a release and assignment of the Association of all rights, title and interest of such member in and to all the property of the Association.

Article IX—Incorporation

Section 1—To aid in carrying out the purposes of the Association, the House of Delegates at any Annual Assembly or Special Meeting thereof, may by a two-thirds vote of all members of such House of Delegates registered at such Annual Assembly or Special Meeting, authorize the incorporation of this Association. Upon such authorization being given by the House of Delegates, such incorporation shall be effected by filing in the office of the Secretary of State a copy of the Constitution and By-Laws of this Association, duly attested by the President of the Association and countersigned by its Secretary-Treasurer, as provided by law. Upon such incorporation being effected, the Board of Trustees, together with the President and Secretary-Treasurer of the Association, shall thereupon become the Board of Directors of such corporation.

Section 2—The principal place of business for this corporation shall be in the City of Lincoln, County of Lancaster, State of Nebraska.

Article X—Referendum

Either the General Meeting of the Association or the House of Delegates, by a two-thirds vote respectively, may order a general referendum upon any question then pending before the House of Delegates, and submit the question to the whole Active Membership of the Association for a vote. Such referendum shall be conducted by mail ballot in such manner as the House of Delegates may prescribe. If the persons voting shall comprise a majority of all the Active Members of the Association, a majority of such vote shall determine the question.

Article XI—Seal

The Association shall have a common seal, and may alter or change the same as provided by law.

Article XII—Amendments

The House of Delegates may amend any Article of this Constitution at any Annual Assembly by a two-thirds vote of the members of the House registered at that Annual Assembly; provided, however, that such proposed amendment shall have been presented in writing in open meeting at the previous Annual Assembly of the House and that it shall have been officially sent to each Component Society at least sixty days prior to the first meeting of the Annual Assembly at which final action is to be taken.

Article XIII—Repeal

All Articles and all Sections of all Articles of the Constitution of the Nebraska State Medical Association as said Constitution existed up to and including the......................day of......................A. D. 193...., are hereby repealed.

REVISED BY-LAWS

The Nebraska State Medical Association

Chapter I—Membership

Section 1—The name of a physician on the official roster of this Association after the same has been properly certified as hereinafter provided for in these By-Laws by the secretary of the physician's Component Society and classified as to that physician's type of membership, shall be prima facie evidence of that physician's membership and his right to all privileges of his class of membership.

Section 2—Any member expelled from his Component Society, or suspended from its rights and privileges shall likewise be expelled or suspended for a like period from this Association. The right of appeal to the Council of this Association shall not be impaired nor shall such appeal prevent the carrying out of the judgment of the Component Society pending such appeal. Members not in good standing or ceasing to be members of their Component Society shall ipso facto have the same status in this Association.

Section 3—All living Past Presidents of this Association shall, upon passage of this By-Law, be presented with a certificate of service. The same shall be presented annually to each retiring President.

Section 4—Members who are properly certified to the Executive Secretary of this Association as Active Members in good standing of their respective Component Societies and for whom all dues and assessments for the current year have been received by the Executive Secretary of this Association, shall be classified as Active Members of this Association.

Section 5—Junior Membership may be issued to any Interne in a recognized hospital in the State of Nebraska, for the cost of the publications for the membership of this Association.

Section 6—Associate Membership may be issued to any physician employed by the Federal Government, and who resides in the State of Nebraska, upon presentation of proper credentials showing them to be graduates of accredited medical schools. This class of membership shall enjoy the same rights and privileges as regular Active Members when they have been properly certified to the Executive Secretary of this Association and for whom all dues and assessments for the current year have been received.

Section 7—Honorary Membership may be bestowed upon any member of a Component Society upon recommendation of that Component Society in which such member may hold membership, and by a two-thirds vote of the House of Delegates in regular session, and the approval of the Board of Councillors. Such membership shall be for life unless revoked by the Component Society from which the membership originated, by and with the consent of the House of Delegates and the Board of Councillors.

Section 8—Honorary Members of this Association shall pay no dues, shall have no vote and shall be ineligible to hold any constitutional office. Honorary members shall be entitled to receive all official publications of this Association without cost.

Section 9—Except as modified by the provisions of these By-Laws, members of all membership classifications shall be equally privileged. Wherever in following Chapters and Sections the unqualified term "Members" shall be used, the same shall refer equally to all classes of members of this Association.

Chapter II—Annual Assembly

Section 1—Each member in attendance at an Annual Assembly shall enter his name upon a registration book or index provided for that purpose, and shall thereupon receive an identification badge which shall entitle him to all the rights and privileges attendant upon his class of membership for that Annual Assembly. No member may take part in any of the proceedings of an Annual Assembly until he has complied with the provisions of this Section.

Section 2—The General Meetings of the Annual Assembly shall be devoted to the scientific work of the Association, to the annual address of the retiring President, to special addresses by appointment, and to such matters of general interest to the Association as may have been placed upon the program by order of the House of Delegates, the Board of Councillors or the Committee on Scientific Assembly.

Section 3—The General Meeting shall have authority to create committees or commissions to investigate and report upon medical matters of special interest to the profession or the public. Any expense connected therewith must first be approved by the House of Delegates in the manner elsewhere provided concerning appropriations.

Section 4—All resolutions or memorials of a General Meeting or of a section designed to be issued in the name of the Association must be referred to the House of Delegates not later than twenty-four hours prior to the time fixed for sine die adjournment of the House and must have the approval of the House of Delegates before being issued or becoming effective.

Section 5—The order of exercises, papers, addresses and discussions at a General Meeting as fixed by the Committee on Scientific Assembly shall be followed exactly, except when otherwise ordered by a two-thirds vote of the members present. A definite time shall be set aside by the Committee on Scientific Assembly for each of the following; the annual address of the retiring President, any special address by appointment, and any matter ordered by the House of Delegates or the Board of Councillors to be considered on the program of the General Meeting.

Section 6—No paper or address before the General Meeting except those of the President, appointed special speakers and guests, may occupy more than twenty minutes in delivery. No member may occupy more than five minutes in discussion of a paper or address at a General Meeting. No member may speak more than once to the same subject at a General Meeting except the essayist, who may close the discussion.

Section 7—Every paper read before a General Meeting or Section of this Association shall become its exclusive property, and shall be deposited with the Executive Secretary immediately upon the conclusion of its reading; provided, that the cost of publishing of such paper shall be borne by the Association.

Section 8—Any member of this Association whose name shall appear on the program of the Annual Assembly as an essayist and who shall fail to present his essay at the time fixed by the Committee on Scientific Assembly, shall be denied a place on the programs of the next two ensuing Annual Assemblies; provided, however, that for cause deemed by the Committee on Scientific Assembly to be sufficient, a member may be excused from the penalty of this Section.

Section 9—Notices pertaining to the Annual Assembly shall be published in the official publications of the Association.

Chapter III—Special Meetings

Section 1—Special Meetings of the Association may be called by the House of Delegates.

Section 2—Special Meetings of the House of Delegates may be called by vote of the House at a previous meeting, by the President, by order of the Board of Councillors or by petition of one-third of the accredited members of the House of Delegates presented to the President; provided, each Councillor District be represented.

Section 3—Notice and purposes of any Special Meeting of the Association shall be published in the official publications of the Association; provided, that no such Special Meeting may be called for a time within thirty days immediately preceding or immediately following the Annual Assembly. Notice for a Special Meeting of the House of Delegates, unless given in open meeting of the House, shall be mailed to each accredited member of the House of Delegates at least ten days before the time fixed for such meeting to convene, and shall state the time, place and purposes of such meeting. No other business except that outlined in the official notice may be transacted at any Special Meeting of either the Association or the House of Delegates.

Chapter IV—Delegates

Section 1—To be eligible for election as a Delegate or Alternate by a Component Society, a physician shall have resided and practiced in the State of Nebraska for at least two years and shall have been an Active Member of that Component Society for at least two years immediately preceding his election.

Section 2—Members of the House of Delegates shall be elected for terms of two years, and elections to fill vacancies shall be for the unexpired term. Component Societies entitled to more than one Delegate shall so elect their Delegates that one-half, as near as may be, shall be elected each year.

Section 3—Each Component Society in good standing, as hereinafter provided in these By-Laws, shall be entitled to send to the House of Delegates each year one Delegate for every fifty Active Members in good standing on December 31 of the calendar year immediately preceding, and one Delegate for an additional fraction thereof; provided, however, that each Component Society shall be entitled to at least one Delegate.

Section 4—Each Component Society shall elect an individual Alternate for each Delegate, who shall be eligible as hereinafter provided to represent his Component Society as Delegate in the event of his Delegate failing to attend or qualify for service.

Section 5—An accredited Delegate, as provided for in Chapter IV, Section 1, once seated at an Annual Assembly or Special Meeting, shall serve throughout that Annual Assembly or Special Meeting without substitution, unless substitution is consented to by a vote of the House. In case of the absence of an accredited Delegate who has not yet been seated, that Delegate's accredited Alternate shall be seated if present, but shall yield his seat to his Delegate upon the appearance of said Delegate upon the floor of the House, and said Delegate shall be thereupon automatically seated. Except as otherwise provided for in these By-Laws, and subject to confirmation by vote of the House, members of the House of Delegates shall be considered seated when they have answered the original roll call as prepared by the Committee on Credentials.

Section 6—Each Delegate shall be entitled to one vote only, and he shall represent the Component Society through which his Active Membership originates and no other. No representation in the House of Delegates may be accorded a Component Society whose Delegates and Alternates are absent. No proxies shall be recognized under any circumstances.

Chapter V—House of Delegates

Section 1—The House of Delegates shall meet at the time and place of the Annual Assembly. It may meet in advance of or remain in session after the adjournment of the Annual Assembly. Its meetings shall interfere as little as possible in time with the General Meeting, and shall not conflict with the first General Meeting of the Annual Assembly or the retiring President's address. Meetings of the House of Delegates, except executive sessions thereof, shall be open to all members of the Association registered at that Annual Assembly.

Section 2—Except as otherwise provided for in these By-Laws or as otherwise ordered by a two-thirds vote of the House of Delegates, the following shall be its order of business:

1. Call to order by the Speaker of the House of Delegates.
2. Report of the Committee on Credentials.
3. Calling of the roll.
4. Reading of the minutes.
5. Report of the Board of Trustees.
6. Report of the Board of Councillors.
7. Reports of officers.
8. Reports of standing committees.
9. Reports of special committees.
10. Reports of reference committees.
11. Unfinished business.
12. New business.

Section 3—No new business shall be introduced on the last day of the annual meeting of the House except by consent of a two-thirds vote of all accredited members of the House registered at that Annual Assembly, and such new business shall require a two-thirds vote of those present for final action.

Section 4—Twenty accredited members of the House of Delegates shall constitute a quorum for the transaction of business.

Section 5—The House of Delegates shall keep and order published to the Association detailed minutes of all its proceedings except its executive sessions. Actions determined upon in executive session shall be made final and recorded in substance in open session.

Section 6—The House of Delegates shall foster and promote the constitutional purposes of the Association. It shall have the power to create commissions and special committees from its own membership, from the general membership of the Association or from the public at large. It shall have the power to create reference committees for the conduct of its business, decisions of such committees becoming final only upon vote of the House; provided, that with the consent of the House, the Speaker may create and appoint such reference committees. Unless otherwise ordered by the House, the term of any reference committee shall expire automatically with sine die adjournment of the Annual Assembly or Special Meeting of the House at which the said committee was appointed.

Section 7—Members of committees who are not members of the House of Delegates may report to the House in person and may participate in the discussion of matters pertaining to the work of their committees, without vote.

Section 8—Impeachment of any officer, brought to the House of Delegates by the Board of Councillors shall be in writing and shall have been voted by two-thirds of its members. The House of Delegates shall determine its own procedures for hearing impeachments. The signature of twenty Active Members to charges for impeachment shall require full hearing of such charges by the Board of Councillors. Accuser and accused shall be permitted to present evidence and witnesses in all hearings before the appropriate Board or before the House of Delegates in all impeachment proceedings.

Section 9—The House of Delegates and the Board of Councillors shall present a summary of all their proceedings to the last General Meeting of each Annual Assembly.

Section 10—It shall divide the state by counties into twelve Councillor Districts and each shall be represented by a resident Councillor, to-wit:

Councillor Districts

No. 1 Douglas, Sarpy;
No. 2 Lancaster, Cass, Otoe;
No. 3 Gage, Johnson, Nemaha, Pawnee, Richardson;
No. 4 Knox, Cedar, Dixon, Dakota, Antelope, Pierce, Wayne, Thurston, Madison, Stanton, Cuming;
No. 5 Burt, Washington, Dodge, Colfax, Platte, Boone, Nance, Merrick;
No. 6 Saunders, Butler, Seward, Polk, York, Hamilton;
No. 7 Clay, Fillmore, Saline, Nuckolls, Thayer, Jefferson;
No. 8 Cherry, Keyapaha, Brown, Boyd, Rock, Holt, Sheridan;
No. 9 Custer, Valley, Greeley, Sherman, Howard, Dawson, Buffalo, Hall, Grant, Hooker, Thomas, Blaine, Loup, Garfield, Wheeler;
No. 10 Gosper, Phelps, Adams, Furnas, Harlan, Franklin, Webster, Kearney, Chase, Hayes, Frontier, Dundy, Hitchcock, Red Willow;
No. 11 Lincoln, Perkins, Keith, McPherson, Deuel, Garden, Logan;
No. 12 Scottsbluff, Banner, Box Butte, Morrill, Dawes, Sioux, Kimball, Cheyenne;

and when the best interests of the Association and profession will be promoted thereby, organize in each a District Medical Society, to meet midway between the Annual Assemblies of this Association, and members of the chartered Component Societies, and none others, shall be members in such District Societies.

Chapter VI—Election of Officers

Section 1—All nominations and elections by the House of Delegates shall be by secret ballot, and no nomination speeches shall be made during any session of the House.

Section 2—It shall be the duty of the Secretary-Treasurer of this Association to provide printed nomination ballots for each Active Member of the Association upon his registration at the Annual Assembly. This nominating ballot shall provide a blank space wherein the Active Member may write his preference of a candidate for each of the offices to be elected by the House of Delegates.

Section 3—Immediately upon registration, Active Members shall each receive a nominating ballot, providing he desires to exercise his right of franchise, and shall forthwith write in the names of such persons as he may wish to nominate for the offices to be balloted upon, and at once, before leaving the registration booth, deposit said nominating ballot in a box provided for that purpose. Under no other circumstances or at any other time shall any member be allowed the privilege of his nominating franchise.

Section 4—At the first meeting of the House of Delegates on the first day of each Annual Assembly, it shall be the duty of the Speaker of the House of Delegates to appoint a Committee on Elections, which shall consist of five members of the House of Delegates.

Section 5—The ballot box for nominations shall be closed at 8:00 p. m. on the second day of each Annual Assembly and it shall be the duty of the Committee on Elections to audit the nominating ballots cast and shall select as candidates for each office, the two members receiving the highest number of nominating ballots cast for that office.

Section 6—The report of the Committee on Elections and the election of officers shall be the first order of business of the House of Delegates after the reading of the minutes on the morning of the last day of the Annual Assembly.

Section 7—The qualified voters of the House of Delegates shall be provided with printed ballots containing the names of the nominees for each office to be elected at that Annual Assembly and after voting, each Delegate shall deposit his ballot in the ballot box provided for that purpose.

Section 8—A blank line shall be provided on the official ballot for each office and any official Delegate may cast his ballot for a third candidate by writing the name of his preference on the blank line provided.

Section 9—It shall be the duty of the Committee on Elections to take charge of the ballot box immediately after the official election ballot has been cast. They shall audit the official ballot in a closed session apart from the House of Delegates and shall declare elected each candidate who receives the highest number of the votes cast for the office named. Announcement of the official elections shall be made before the General Meeting by the Speaker of the House of Delegates at the first afternoon session of the last day.

Section 10—It shall be the duty of the Secretary-Treasurer of this Association to provide the necessary ballots and ballot boxes provided for in this Chapter.

Chapter VI—Election of Officers

(Alternate Chapter)

Section 1—The House of Delegates shall elect the officers of this Association, and Delegates to the American Medical Association, and select the place for the following Annual Assembly on the morning of the last day of the Annual Assembly. Nominations shall be from the floor of the House, and by voting members of the House. Nominating speeches shall not exceed two minutes in duration. No person known to have solicited votes for or to have sought any office within the gift of the Association, shall be eligible to nomination therefor.

Section 2—All elections shall be by secret ballot, and a majority of the votes cast shall be necessary to elect. When there are three or more nominees, the one receiving the least number of votes on each ballot shall be dropped, until a majority vote is received by one of the said nominees. When there is only one nomination, vote may be acclamation.

Chapter VII—Duties of Officers

Section 1—The President shall preside over the General Meetings of the Association, and with the approval of the Board of Councillors appoint all committees not otherwise provided for; he shall deliver an annual address before the General Meeting at the expiration of his administration; he shall assist the Councillors in building up Component Societies; he shall be, ex-officio, a member of all committees and shall perform such other duties as custom and parliamentary usage may require. The President may create and appoint special committees for any purpose and assign to them any powers and duties not in conflict with this Constitution and By-Laws; provided, that the terms of such committees may not exceed one year unless continued by order of the House of Delegates. The President may make suggestions at any time to the General Meeting, to the House of Delegates, the Board of Councillors, the Board of Trustees or any committee.

Section 2—The President-elect shall, during his term as such, familiarize himself with the duties which will devolve upon him as President, and shall perform such other duties as may be directed by the House of Delegates. The President-elect shall appoint such committees as may be authorized for Presidential appointment for the next ensuing year, subject to confirmation by the Board of Councillors at its Annual January Meeting preceding his ascendence to the Presidency.

Section 3—The Vice-Presidents shall assist the President in the discharge of his duties and in the event of the President's death, resignation, removal or other disability, the Council shall elect one of the Vice-Presidents to succeed him for the unexpired term.

Section 4—The Speaker of the House of Delegates shall preside at all the sessions of the House of Delegates, shall appoint all reference committees and shall perform such duties as custom and parliamentary usage require. He shall have the right to vote only when his vote shall be the deciding vote. He shall be, ex-officio, a member of the Council with the privilege of the floor, but not with right to vote. He shall cause the voting members of the House of Delegates to be properly segregated in order to facilitate roll calls and performance of its business with dispatch.

Section 5—The Vice Speaker of the House of Delegates shall assume the Speaker's duties during the Speaker's absence. He shall act in the capacity of Sergeant at Arms and shall assist the Speaker in the performance of his duties. He shall have the right to vote only when acting in the capacity of the Speaker and then only in case of a tie vote. He shall be, ex-officio, a member of the Council with the same rights and privileges as those of the Speaker. In the event of the Speaker's death, resignation, removal or other disability, he shall automatically succeed to the Speaker's position for the unexpired term.

Section 6—The Secretary-Treasurer, in case of vacancy in the office of Executive Secretary, shall assume the duties of that office, pending the filling of such vacancy, and shall perform such other duties as are imposed by this Constitution and By-Laws. He shall be the scientific and professional advisor of the Executive Secretary, and shall assist and advise the Executive Secretary in all matters of a professional or medical nature. He shall provide for the registration of members and Delegates at the Annual Assembly and shall act as Secretary, and keep such records as are necessary, to the House of Delegates, the General Sessions and the Board of Trustees. He shall conduct the official correspondence such as notifying members of meetings, officers of their election, committees of their appointment and duties, and shall use the influence of his office to the improvement of the Component Societies and to the advancement of the Association. He shall, acting with the Committee on Scientific Assembly, prepare and issue programs for and attend all meetings of the Association and House of Delegates, and shall keep the minutes of their respective proceedings. He shall be the custodian of all moneys, securities and deeds of the Association which may come into his possession, and shall hold the same subject to the direction and disposition of the Board of Trustees; provided, however, that the Board of Trustees may select a bank or trust company to act as custodian, in place of the Secretary-Treasurer, of all or any part of the moneys, securities and deeds of the Association and to act as agent of the Association in collecting any income therefrom; provided, however, further, that the Board of Trustees may appoint any bank or trust company as trustees of any trust, foundation or fund or any subsidiary organization or corporation established by the Association. The Board of Trustees may, from time to time, subject to instructions from the Board of Councillors, appoint additional custodians or change existing custodians as may be for the best interests of the Association. He shall make such periodic reports of his official transactions as may be required by the Board of Trustees. He shall, conforming to the fiscal year of the Association, submit his books and records to a Certified Public Accountant, designated by the Board of Trustees, whose report thereon shall be presented to the Board of Councillors. He shall be bonded at the expense of the Association in such amount as the Board of Trustees may require and shall receive such salary for his services and expenses in the performance of his duties as the Board of Trustees may decide.

Section 7—The Executive Secretary shall perform the duties usual to such an office and to the office of Secretary, except such as are specifically imposed upon the Secretary-Treasurer by this Constitution and By-Laws. He shall be directly responsible to the Board of Trustees for all his actions. Subject to advice of the Board of Councillors and the Board of Trustees, he shall act as general administrative officer and business manager of the Association. He shall refer to the Secretary-Treasurer all questions of medical or professional nature. He shall be custodian of all Association records and shall keep a card index of all Practitioners of Medicine in Nebraska by counties, rendering such information to the American Medical Association and this Association pertaining thereto as may from time to time be requested. He shall be the custodian of the official seal, the general papers and all records of the Association, except as are designated for other custody by this Constitution and By-Laws or by order of the Board of Trustees. He shall keep account of and promptly turn over to the Secretary-Treasurer, or to such other custodian as the Board of Trustees may direct, all funds of the Association which may come into his possession. He shall keep an account with the Component Societies, charging against each society its assessments, collecting the same and promptly turning the same over to the Secretary-Treasurer. He shall be bonded at the expense of the Association in such amount as the Board of Trustees may require. He shall, conforming to the fiscal year of the Association, submit his books and records to a Certified Public Accountant, designated by the Board of Trustees, whose report thereon shall be submitted to the House of Delegates. He shall aid the Council in the organization of the Component Societies, and in the extension of the influence and usefulness of this Association. He shall, so far as is practicable, visit each Component Society at least once annually. He shall be the Business Manager of the Official Journal, and shall manage all other publications of the Association under the editorial supervision of the Board of Trustees, subject to provisions elsewhere imposed in these By-Laws. He shall supply the Component Societies with the necessary forms and blanks for conducting their official business with this Association. He shall perform such other or additional duties as may be required by the Board of Trustees. He shall employ such assistants as the Board of Trustees may direct. His salary and the salaries of assistants shall be fixed by the Board of Trustees.

Section 8—Delegates to the American Medical Association shall attend the annual sessions and any special meetings of the House of Delegates of the American Medical Association and shall faithfully represent this Association and its official policies in said House of Delegates.

Section 9—The House of Delegates may assign other and additional duties to the constitutional officers and the Executive Secretary of the Association, or it may create additional offices whose duties shall not conflict with those of constitutional officers or the

Executive Secretary, for the performance of duties not foreseen in the Constitution and By-Laws, and may assign to such officers duties not in conflict herewith as the House deems for the best interests of the Association. Such officers shall be selected by the Board of Trustees; provided, however, that if in the judgment of the House such is for the best interests of the Association, eligibility to such office need not include Active Membership as a prerequisite.

Section 10—Each officer of the Association shall submit an annual report of his activities to the House of Delegates; provided, however, that the House may permit officers who are members of the Board of Trustees to combine their reports in the annual report of the Board of Trustees, may permit the Delegates to the American Medical Association to combine their reports as one and may in no case require personal details to be included in the report of the Board of Councillors, which latter may combine the reports of all Councillors.

Chapter VIII—Board of Trustees

Section 1—Immediately following each Annual January Meeting of the Board of Councillors, the Board of Trustees shall organize by electing a Chairman and Vice-Chairman, and within its own membership the Chairman shall appoint such committees as may be necessary. Meetings shall be held at least quarterly and Special Meetings shall be held at the call of the Chairman. Three members shall constitute a quorum.

Section 2—The Secretary-Treasurer of the Association shall be the Secretary-Treasurer of the Board of Trustees. In the event a vacancy shall occur in the office of Secretary-Treasurer, by death or otherwise, the Board of Trustees shall select a member of the Association to fill such vacancy until the next ensuing meeting of the Board of Councillors.

Section 3—The Board of Trustees shall exercise general supervision over the financial affairs of the Association, exercising in general the duties devolving upon Directors of Corporations. They shall have power to act for the Association between Annual Assemblies of the House of Delegates and the Board of Councillors and to perform in general the following functions:

make recommendations to the Board of Councillors or House of Delegates;

advise in financial deliberations of the several standing committees, more especially those of a non-scientific nature;

supervise and direct all the official publications of the Association;

appoint an Editor and such other assistants as the needs of the Association may require;

determine all salaries;

pass upon all recommendations for incurring expense and present an annual budget;

refer and otherwise dispose of all business properly arranged for its disposition;

establish and maintain the official headquarters of the Association;

require and hold the official bonds of such officers of the Association as herein designated or as they may deem necessary to others in the employ of the Association;

acquire, hold, maintain and dispose of such moneys and property, personal and real, as may now be or shall hereafter come into possession of the Association.

Chapter IX—Board of Councillors

Section 1—The Board of Councillors shall hold daily meetings during the Annual Assembly of the Association and at such other times as necessity may require, subject to the call of the chairman, or on petition of three Councillors. It shall meet in January prior to the Annual Assembly of the Association for organization and for the outlining of work for the ensuing year. At this meeting it shall elect a chairman and secretary, and it shall keep a permanent record of its proceedings. It shall, through its chairman, make an annual report to the House of Delegates at such time as may be provided. Seven members shall constitute a quorum of the Board of Councillors. The reports of all standing committees, which are presented to the House of Delegates, shall be referred, without debate, to the Board of Councillors for their recommendation.

Section 2—Each Councillor shall be organizer, peacemaker and censor for his own district. He shall visit each county in his district once each year and as often as in his judgment is necessary for the purpose of organizing Component Societies where none exist, for inquiring into the conditions of the profession and for improving and increasing the zeal of the County Societies and their members. He shall make an annual report of his doings and of the condition of the profession in each county in his district to each Annual January Meeting of the Board of Councillors. Each Councillor shall annually make a report of the deaths which have occurred in his district, and send the same, at least ten days before the Annual Assembly, to the recording secretary of the Council, who shall put such reports into proper form and present the same to the General Meetings. It shall be the duty of each Councillor to appoint honorary pall-bearers to represent the Nebraska State Medical Association at the burial of any member residing in his District. The necessary traveling expenses incurred by such Councillor in the line of his duties herein imposed may be allowed by the Board of Trustees upon presentation of a properly itemized statement. This shall be construed to include his expenses in attending the Annual January Meeting and Special Meetings of the Council, but not the Annual Assembly of the Association.

Section 3—Collectively the Council shall be the Board of Censors of the Association. It shall consider all questions involving the rights and standing of members whether in relation to other members, the Component Societies or this Association. It shall hear and decide all questions of discipline affecting the conduct of members or of the Component Society, upon which an appeal is taken from the decision of an individual Councillor. Its decision in all such cases shall be final.

Section 4—Charters shall be issued to Component Societies by the Board of Councillors, and shall be signed by the President and Secretary-Treasurer of this Association. The Board of Councillors may revoke the charter of any Component Society or the membership of any individual whose actions are in conflict with the letter or spirit of this Constitution and By-Laws.

Section 5—In sparsely settled sections the Councillor shall have the authority to organize the physicians of two or more counties into Component Societies, to be suitably designated so as to distinguish them from District Societies, and these Societies when organized and chartered, shall be entitled to all rights and privileges provided for Component Societies until such Counties organize separately.

Section 6—At the death, removal from the District, or removal otherwise from office of any Councillor, such vacancy shall be filled by the President of the Association until the next meeting of the House of Delegates and a notice of the appointment shall be sent to the Secretary of the Board of Councillors and to the Executive Secretary of the Association; provided, however, that in the absence of a Councillor from any session of the Board of Councillors, the

President may name a member from the District affected, to act as Councillor pro tem.

Section 7—The Council shall employ an Executive Secretary, who need not be a physician nor a member of the Association.

Section 8—The Board of Councillors shall advise in a general way pertaining to all actions of the Board of Trustees, and shall elect, as prescribed in the Constitution, members of the Board of Trustees and the Secretary-Treasurer.

Chapter X—Committees

Section 1—There shall be two classes of committees, namely Scientific and Non-Scientific, as relates to the standing committees of this Association.

Section 2—The standing Non-Scientific Committees of the Association shall be as follows:

Committee on Public Policy and Legislation
Committee on Medical Legal Advice
Committee on Scientific Assembly
Committee on Student Loan Fund
Committee on Library, Necrology and Records
Committee on Insurance
Committee on Auxiliary to the State Medical Association
Committee on Allied Professions
Committee on Credentials.

Section 3—The Committee on Public Policy and Legislation shall consist of five members and the President, Secretary-Treasurer and Executive Secretary. It shall represent the Association in securing and enforcing legislation in the interest of the public health and of scientific medicine, with the financial advice of the Board of Trustees. It shall keep in touch with professional and public opinion; endeavor to shape legislation so as to secure the best results for the whole people and utilize every organized influence in local, state and national affairs and elections. Its work shall be done with the dignity becoming a great profession and with that wisdom which will make effective its powers and influence. It shall have authority to be heard before the entire Association upon questions of great concern.

Section 4—The Committee on Medical Legal Advice shall consist of three members selected by the Board of Councillors for terms of three years each, so arranged that one member be selected each year. When called to the attention of this committee, claims or suits arising from alleged malpractice and brought against members of the Association, shall be thoroughly investigated in such manner and in accordance with such rules and regulations as may be prescribed by this Committee. Such rules and regulations as drawn and adopted by this Committee shall, when approved by the Board of Councillors, have full authority and effect of these By-Laws. The Chairman of this Committee shall receive such compensation as shall be prescribed by the Board of Trustees, in accordance with services rendered.

Section 5—The Committee on Scientific Assembly shall be in full and complete charge of all proceedings of the Annual Assembly except the proceedings of the House of Delegates, the Board of Trustees and the Board of Councillors, the requests of which boards the Committee shall observe in preparing times and places for said boards to meet. The Committee may appoint such sub-committees from the Association at large as may be necessary to its purpose. It shall cause a general program of the Annual Assembly to be published in the Official Journal in its issue preceding the Annual Assembly and may issue supplemental programs by mail to members of the Association and to other persons. This committee shall be composed of the Secretary-Treasurer and four members appointed by the President for terms of four years each, so arranged that the term of one member shall expire each year. This committee may, in order to cover the entire scope of an Annual Assembly, appoint sub-committees on arrangements, entertainment, scientific exhibits, commercial exhibits, guests, registration and such other activities necessary to the performance of their duties.

Section 6—The Committee on Student Loan Fund shall consist of three members selected by the Board of Councillors. This Committee shall make rules and regulations governing the making of loans to worthy medical students, subject to the general supervision of the Board of Councillors.

Section 7—The Committee on Library, Necrology and Records shall consist of three members appointed by the President for terms of three years rotating in such manner that the term of one member shall expire each year. They shall on behalf of the Association collect, preserve and perpetuate such records, books, journals and other material pertaining to the Association, its members, or of the Science of Medicine in general as may come into their possession and as may properly belong in the Archives of the Association. It shall be the duty of the Board of Trustees to cooperate with this Committee and provide suitable library facilities. The Committee shall generally supervise for this Association all property deposited by or for this Association in said library.

Section 8—The Committee on Insurance shall consist of three members appointed by the President whose duties shall be to investigate and present to the Board of Councillors of the Association, plans of insurance as pertain to physicians liability, and other insurance matters of interest to the profession.

Section 9—The Committee on Auxiliary to the State Medical Association shall consist of three members appointed by the President whose duties shall be to cooperate with and to foster the relationship between the Auxiliary of the Nebraska State Medical Association and the Nebraska State Medical Association.

Section 10—The Committee on Allied Professions shall consist of three members appointed by the President whose duties shall be to endeavor to create a proper liaison between this Association and other organized groups of related professions such as Dentistry, Veterinary Medicine, Pharmacy and Nursing. It shall also endeavor to bring about a proper understanding with non-medical organizations or groups such as technicians and others whose work has a bearing on or is related to the practice of medicine.

Section 11—The Committee on Credentials shall consist of the Secretary-Treasurer, who shall be its chairman, and four Delegates appointed by the President, no two of whom shall be from the same Component Society. They shall be appointed from among Delegates whose terms do not expire until after the next ensuing Annual Assembly. It shall be the duty of this Committee to examine and approve the credentials of all members of the House of Delegates prior to its first meeting at each Annual Assembly. It shall also be the duty of this committee to examine and report to the House of Delegates all questions concerning the registration and credentials of members at the Annual Assembly.

Section 12—The standing Scientific Committees of the Association shall be under the guidance and direction of a committee known as the Committee on Medical and Public Health Education hereby created as a correlating committee for all scientific and educational activities of this Association. In order that this policy be carried out with a minimum of duplication in such activities, the said Committee on Medical and Public Health Education shall outline the activities and policies to be pursued by such cooperating Scientific Committees as are specifically named in Chapter X, Section 13, of these By-Laws, and those committees which may be formed in the future. These cooperating scientific committees shall consist of three members each and shall be appointed by the President.

Section 13—The Committee on Medical and Public Health Education shall consist of six members appointed by the President and confirmed by the House of Delegates, the term of each member being for six years and so rotated that one member be appointed each year. Ex-officio members of this Committee shall consist of the President, President-elect, Secretary-Treasurer, Executive Secretary, Speaker of the House and Editor of the Journal. In addition, the chairman of the following named committees shall act as advisory members, without right to vote; The Speaker's Bureau, Cancer Committee, Fracture Committee, Convalescent Serum Committee, Tuberculosis Committee, Maternal and Child Health Committee, Prevention and Amelioration of Deafness Committee, Public Health Committee, Planning Committee, Conservation of Vision Committee, Venereal Disease Committee, Pneumonia Committee, Committee on Hospital and Medical Standards and such other committees as may in the future be formed as pertains to matters of health and education. The Deans of Creighton and the University of Nebraska Medical Schools shall be advisory members of this Committee. It shall be the duty of this Committee to direct the educational policies of the Nebraska State Medical Association pertaining to the physician and layman in its health education program, and to cooperate with the Nebraska (State) Department of Health or any other organization interested in matters pertaining to health.

Section 14—All committees named under this Chapter X of these By-Laws shall submit a written annual report to the January Meeting of the Board of Councillors and shall submit such additional reports as the House of Delegates or the Board of Councillors may direct.

Section 15—Except as otherwise provided by these By-Laws and subject to the direction of the power creating committees, the terms of all standing committees shall coincide with that of the appointing President or President-elect. Standing committees unless otherwise provided for shall consist of three members each with the addition of such ex-officio members as may be provided for in these By-Laws. Except as otherwise provided for herein, ex-officio members of committees shall have the right to vote in such committees. Except as otherwise provided for herein, the chairman of each standing committee and any continuing special committee shall be appointed as a member of the same committee for the following year. All committees, except as otherwise provided, shall be appointed by the President and approved by the Board of Councillors.

Section 16—Standing and special committees shall perform such other or additional duties not in conflict with these By-Laws as may be directed by the House of Delegates or the appointing power, and shall have terms and memberships coinciding with the appointing power.

Chapter XI—Official Journal

Section 1—The Association shall publish monthly an Official Journal, under the title selected by the Board of Trustees. All material published in the Journal shall be strictly ethical in character and all advertisements of therapeutic products in the Journal shall further conform to the rules and regulations of the appropriate Councils, Bureaus and Committees of the American Medical Association. The publication of the Official Journal for the Association shall be under the direct supervision of the Board of Trustees, who shall select the Editor and Business Manager for the Journal.

Section 2—Except as otherwise provided for by law or in the Constitution and By-Laws, publication of any notice in the Official Journal shall be considered as full notice to all members of the Association for any purpose.

Section 3—All books and journals purchased or received in exchange or for review, all surplus copies of the Official Journal and the archives of the Journal, except such as properly belong in the custody of the Secretary-Treasurer or Executive Secretary and such as may be designated for other custody by the Board of Trustees, shall be deposited, as soon as need for their current use is satisfied, with the Library of the Nebraska State Medical Association under the provisions of Chapter X, Section 7, of these By-Laws.

Section 4—The Official Journal shall be supplied and sent monthly to all Active and Honorary Members of the Association and to such other persons and under such rules and regulations and prices as the Board of Trustees may direct.

Chapter XII—Assessments and Expenditures

Section 1—An assessment of $10.00 per capita on the membership of the Component Societies is hereby made the annual dues of this Association. The secretary of each Component Society shall forward its assessment, together with its roster of all officers and members, list of all Delegates and list of non-affiliated physicians of the County to the Executive Secretary of this Association on or before the last day of February of the proximate year. If dues are not received by the Executive Secretary by this date, subscription to the Journal expires.

Section 2—Any County Society which fails to pay its assessment, or make the reports required, on or before the date stated in the preceding section, shall be held as suspended and none of its members or Delegates shall be permitted to participate in any of the business or proceedings of the Association or of the House of Delegates until such requirements have been met.

Section 3—All motions or resolutions appropriating money shall specify a definite amount, or so much thereof as may be necessary for the purpose indicated, and must be approved by the Council and the House of Delegates on a call of ayes and nays. Emergency expenditures may be authorized by the Board of Trustees.

Section 4—The calendar year is the fiscal year of the Association. The dues, whenever paid, are for the year covered by the report of the County Secretary. The Journal shall be sent to all new and reinstated members commencing with the issue of the month in which payment of dues is received in the office of the Executive Secretary.

Chapter XIII—County Societies

Section 1—All County Societies now in affiliation with the State Association or those that may hereafter be organized in the state, which have adopted principles of organization not in conflict with this Constitution and By-Laws, and having complied with the conditions imposed by this chapter, shall, upon application to the Secretary-Treasurer of the State Association, receive a charter from and become a component part of this Association, subject to the subsequent approval of the Board of Councillors.

Section 2—As rapidly as can be done after the adoption of this Constitution and By-Laws, a medical society shall be organized in every County in the State in which no Component Society exists, and charters shall be issued thereto.

Section 3—Charters shall be issued only upon approval of the Councillor of the District in which the Component Society is located, and shall be signed by the President and Secretary-Treasurer of this Association. The Board of Councillors shall have the authority to revoke the charter of any Component Society whose actions are in conflict with the letter or spirit of this Constitution and By-Laws, and to issue duplicate charters to any society in good standing in lieu of lost charter. This charter to supersede all others previously issued.

Section 4—Only one Component Medical Society shall be chartered in any one county.

Section 5—Each Component Society shall be the judge of the professional and moral qualifications of its own members, but as such Societies are the only portals to this Association and to the American Medical Association, every reputable and legally registered physician, a graduate of a college which at the time of his graduation was considered in good standing, who is practicing, or will agree to practice, non-sectarian medicine shall be entitled to membership; provided, however, that licentiates who were admitted under the law of 1881 and registered as regular physicians and have continually practiced regular medicine in Nebraska may be admitted to membership. Before a charter is issued to any Component Society full and ample notice and opportunity shall be given to every physician in its jurisdiction to become a member.

Section 6—Any member who may feel aggrieved by the action of his Component Society in suspending or expelling him, shall have the right of appeal to the Councillor of his District, and finally to the Board of Councillors of the Association.

Section 7—In hearing appeals the Council may admit oral or written evidence as in its judgment will best and most fairly represent the facts, but in case of every appeal, both as a Board and as individual Councillors, efforts at conciliation and compromise shall precede all hearings.

Section 8—When a member in good standing in a Component Society moves to another county, his name upon request may be transferred, without cost, to the roster of the Component Society into whose jurisdiction he moves, if acceptable to that Component Society.

Section 9—A physician living in or near a county line may hold his membership in that county most convenient for him to attend, on permission of the Society in whose jurisdiction he resides.

Section 10—Each Component Society shall have general direction of the affairs of the profession in the county, and its influence shall be constantly exerted for bettering the scientific, moral and material conditions of every physician in the county, every systematic effort shall be made by each member, and by the Society as a whole, to increase the membership until it embraces every qualified physician in the county.

Section 11—Frequent meetings shall be arranged and the most attractive programs arranged that are possible. The younger members shall be especially encouraged to do post-graduate work and original research work, and to give the Society the first benefit of such labors. Official position and other preferments shall be given unstintingly to such members.

Section 12—At the last regular meeting in the fiscal year preceding the next Annual Assembly of the State Medical Association, each Component Society shall elect a Delegate or Delegates to represent it in the House of Delegates of this Association, in the proportion of one Delegate to each fifty members or fraction thereof, and the secretary of the society shall send a list of such Delegates to the Executive Secretary of the Association as provided for in Chapter XII, Section 1, of these By-Laws.

Section 13—The secretary of each Component Society shall keep a roster of its members, and a list of the non-affiliated registered physicians of the county, in which shall be shown the full name, address, college and date of graduation, date and number of license to practice in this state, and such other information as may be deemed necessary. He shall furnish an official report containing such information upon blanks supplied for this purpose to the Executive Secretary and the Councillor of his District on or before the last day of February of the proximate year, remitting to the Executive Secretary at the same time the current dues and dues collected from members in arrears as provided for in Chapter VII, Section 7, of these By-Laws.

Section 14—No money expended by any member or any Component Society, for any purpose whatever, if they expect to be reimbursed by the Nebraska State Medical Association, will be repaid by this Association, unless such expenditure has first been authorized by the Board of Trustees of the Association.

Chapter XIV—Ethics and Discipline

Section 1—The Principles of Medical Ethics of the American Medical Association shall be the rule of conduct for the members of this Association and shall guide the Board of Councillors in all decisions relating to ethical questions.

Section 2—Advertising to or solicitation of the laity, by any group, clinic, hospital, sanitarium or related institution, or by any corporation, association, society or other organization, educational, religious or otherwise, engaged in the care of the sick, except as authorized by the Board of Councillors of this Association or the Board of Censors of the interested Component Society, shall be construed as equivalent to advertising and solicitation by the physicians employed by or associated in any professional capacity with the offending institution and shall subject such physicians to discipline.

Section 3—This Association declares that it is a right and a duty of the medical profession to determine for itself what individuals, institutions and organizations shall have claim upon physicians for gratuitous services.

Section 4—No member of this Association may offer or give to the poor wholly or partly gratuitous medical service, other than in the traditional relationship of physician to private patient, unless the recipient of such service has first been declared eligible thereto by an agency which is engaged in social service investigation and is operating under regulations laid down by this Association. No member shall contract with any agency to render medical service to the indigent except the contract be approved by his Component Society.

Section 5—Nothing in Sections 2, 3 and 4 of this Chapter shall be construed as superseding or amending the Principles of Medical Ethics of the American Medical Association.

Chapter XV—Rules of Order

Section 1—Except as otherwise provided in the Constitution and By-Laws and the Articles of Incorporation of this Association, the current edition of Roberts' Rules of Order shall govern the proceedings of all meetings of the Association, the House of Delegates, the Board of Trustees, the Board of Councillors and of any Section, Committee or other subdivision or group of the Association.

Chapter XVI—Amendments

Section 1—These By-Laws may be amended at any Annual Assembly by a two-thirds vote of the accredited members of the House of Delegates registered at that Annual Assembly, provided the proposed amendment has been presented in writing in open meeting of the House and has lain upon the table for one day.

Chapter XVII—Repeal

Section 1—All Chapters and all Sections of all Chapters of the By-Laws of the Nebraska State Medical Association as said By-Laws existed up to and including the........................day of.................................. A. D., 193...., are hereby repealed.

COMMITTEE ON CONSTITUTIONAL REVISION,
Claude A. Selby, Chairman,
Earle G. Johnson,
Homer Davis.

SOCIETIES

Regular Meeting Lancaster County Medical Society
Tuesday, February 15, 1938
Sharp Building
7:30 P. M.

The regular meeting of the Lancaster County Medical Society was held February 15, 1938, with about thirty members present in spite of the snow storm. The meeting was called to order by the President, Dr. C. F. Andrews. Members of the Chamber of Commerce were introduced including Mr. Walter S. Whitten, J. H. Krusz, and Burks Harley. The Chamber of Commerce has been interested in and supported our museum and library.

Minutes of the last meeting were read and approved. An invitation from Dr. R. A. Lyman to attend several lectures on February 16, by Dr. Paul J. Hanzlik, Chairman of the Department of Pharmacology of Stanford University, California, was read by the President. Application for membership of Drs. Glenn D. Crook and Richard Frank Richie were read for the first time and turned to proper channels.

Dr. G. W. Covey reported a case of tularemia including a description of the clinical course and autopsy findings.

The first scientific paper of the evening was read by Dr. E. B. Reed, "The Question of Septicemia." Discussion followed by Drs. J. Marshall Neely, E. E. Rider, and R. B. Palmer. Dr. D. G. Griffiths gave the second paper entitled "Our Responsibility to the Mentally Ill." The last paper "Insulin Shock Treatment of Dementia Praecox" was given by Dr. F. L. Spradling. Drs. R. M. Strader, P. A. Royal and B. A. Finkle discussed this paper.

Lancaster County Medical Society

The regular meeting of the Lancaster County Medical Society was held Tuesday evening, March 1, with about fifty members present. The meeting was called to order by the President, Dr. C. F. Andrews. Minutes of the previous meeting were read and approved.

The question of the Lancaster County Medical Society's attitude toward the anti-syphilis campaign, which is now being conducted in this community, was raised by the President, who had investigated this matter. The following resolution, drawn up by Dr. G. W. Covey was read:

Resolved, It is customary for the physician to have a Wassermann test on practically every patient who presents himself with any sort of a diagnostic problem. In the practices of most internists the Wassermann test is as much a standard, routine procedure as the urine analysis or the blood count.

Often the patients are not aware that a Wassermann is being done and, if it be negative, they may never be informed that it was done. No doubt many of our patients whose Wassermanns we know to be negative will have them repeated during the present campaign.

The Wassermann reaction will be negative during the first twelve days of the primary infection, a period of great infectiousness. It will not be positive in 100% of cases during the active secondary stage of the infection, a period of very great infectiousness. On the other hand some old cases of syphilis who have become entirely innocuous from the standpoint of spreading the disease, will have a positive Wassermann reaction.

Furthermore, in any considerable series of Wassermann tests there will be found some so-called "false positives" in people who do not have syphilis.

Obviously, therefore, the results of all Wassermann tests must be interpreted in the light of expert medical knowledge, and any wholesale type of testing for the presence or absence of syphilis, especially by the one method, will lead to some unfortunate results. This will be especially true where a single laboratory procedure, not always dependable when perfectly performed and especially susceptible to errors in technic, such as the Wassermann test, is made the criterion of the presence or absence of disease.

Physicians in general are fully as eager to stamp out syphilis and other equally or more important infectious diseases as is Surgeon General Parran. Most of us have been quietly working at it year after year.

Through the foresight of our state legislature $6,000.00 was appropriated through the State Health Department for the present biennium for public health education in tuberculosis and syphilis. This fund was matched with an equal amount of Federal funds. This money is being expended by the State Department of Health in co-operation with the committee on Medical and Public Health Education of the Nebraska State Medical Association in carrying on a state-wide campaign along the lines specified by the legislature. This dovetails perfectly with the national campaign against syphilis.

The special campaign that is in progress at this time against syphilis will have some good results from the standpoint of preventive medicine and we, as physicians, have already placed ourselves on record as supporting the campaign against syphilis being so strongly sponsored at this time by the U. S. Public Health Service ". . . to make the lives of Americans more healthful and more secure," quoting from Dr. Parran himself (J. A. M. A. 109:205).

Be it therefore resolved that the Lancaster County Medical Society hereby express its endorsement of the U. S. Public Health Service program for the eradication of syphilis; and be it further resolved, that this endorsement is made in the light of the above facts and that it shall include such statements of fact relative to examinations for the presence of syphilis as will tend to inform the public thoroughly of the limitations of the Wassermann test when used as the sole criterion of the presence or absence of the disease; and be it further resolved that our endorsement be made public through the press and any other avenues that may reach the people whose health is our charge.

Dr. A. D. Munger voiced disapproval of the campaign. Dr. H. S. Morgan moved an amendment to the above resolution that the Lancaster County Medical Society endorse the campaign of the Junior Chamber of Commerce, against syphilis in its educational features, but not as to the Wassermann test. This motion was seconded by Dr. K. S. J. Hohlen.

It was moved by Dr. E. B. Finney that the entire matter be placed on the table. This motion was seconded by Dr. A. D. Munger. Carried.

Dr. E. B. Finney moved that the chair appoint a committee of three members of the Society to communicate with the Junior Chamber of Commerce and report back to the Society for further instructions. Seconded and carried. The President appointed Dr. E. E. Angle, chairman, A. D. Munger, and W. W. Carveth to serve on this committee.

Judge E. B. Chappell spoke on "The Doctor in Court," and gave some very sage advice. He counseled us to speak in a language familiar to the jurors, while in court.

The second paper of the evening was presented by Dr. Edna W. Schrick, entitled, "Functional Dysmenorrhea." Discussion followed by Drs. H. S. Morgan and E. M. Hansen.

Dr. E. E. Rider, chairman, O. V. Calhoun, and E. B. Brooks were appointed a committee to see what can be done to stop the practice of newspapers singling out doctors and hospitals in bankruptcy notices and determine if it is not possible to publish the entire list of creditors or none.

The **Madison Six County Medical Society** met in the Hotel Norfolk March 1, 1938, with Drs. Brush and Salter in charge of arrangements. The program was as follows: Dr. E. J. Kirk, Omaha, "Nephritis;" Dr. H. A. Wigton, Omaha, "Minor Psychoses;" Dr. A. S. Rubnitz, Omaha, "Pathology of Blood;" Dr. R. D. Schrock, Omaha, Fracture Demonstration for Fracture Committee of State Medical Association.

Tri-County Medical Society including Dodge, Burt, and Washington Counties met in Fremont at the Hotel Pathfinder Feb. 28. The following took part in the scientific program: Dr. Adolph Sachs, Omaha, "Peptic Ulcer;" Dr. Lyman Heine, Fremont, "Otitis Media." H. H. Morrow, Secretary-Treasurer.

Five-County Medical Society including Cedar, Dixon, Dakota, Thurston and Wayne, met Feb. 22 in Wayne at the Hotel Stratton, dinner preceding the scientific session. The program: Dr. L. L. Wilson, Sioux City, Ia., "Treatment of Pulmonary Tuberculosis;" Dr. F. W. Harriman, Sioux City, "Treatment of Gallbladder Disease;" Dr. L. Lande, Sioux City, "Present Status of the Thymus Gland in Children."

The Keith-Garden-Perkins County Medical Society met at Ogallala in the Dutchess Hotel February 9th. The speaker was Dr. R. E. Roach. Dr. Roach gave an interest talk on Fractures of the Hip.

The **Southwest Nebraska Medical Society** met Feb. 17, at the Keystone Hotel in McCook. The program follows: Dr. Herbert H. Davis, "Endocrinology and Its Relationship to Physiology;" Dr. F. Loweel Dunn, "The Treatment of Arthritis;" Dr. A. E. Bennett, "Prevention of Neurosyphilis."

The **Filmore and Saline County Medical Society** met in Crete March 3. Following dinner at Kind's Cafe the regular session was held in the City Council Chambers. The program consisted of a symposium on Chest Conditions. Dr. Harry Everett of Lincoln spoke on "Pulmonary Tuberculosis" and Dr. Harry Flansburg on "Pulmonary Embolism."

The **Southwest Nebraska Medical Society** met March 17 in the Keystone Hotel at McCook. Following was the scientific program: Dr. James E. Russell, "Jaundice in the Newborn;" Dr. Clarence B. Ingraham, "Embryonal Tumors of the Ovary," and Dr. William Black, "Pathology Relative to Ovarian Embryonal Tumors." The speakers are from Denver.

The **Scotts Bluff County Medical Society** held its regular monthly meeting at the West Nebraska Methodist Hospital in Scottsbluff, March 11th. Seventeen doctors were present. Dr. Bartholomew of Lincoln spoke to the Society on misunderstandings concerning the public health units and recent trends in Public Health work.

Dr. E. E. Griggs, President of the Society, read a very interesting paper on his experiences with dinitrophenol. The paper was discussed by Doctors Stoops and Cooper. Dr. Cooper related his experience with sulphanilimide in the treatment of gonorrhea.

Dr. Baker reported the progress of a case of epidemic meningitis under treatment with sulphanilimide.

At a meeting of the **Box Butte Medical Society** held in Alliance March 3, the following officers were elected. Dr. John McCoy, President; Dr. G. F. Johnson, Vice-President; Dr. E. I. Whitehead, Secretary-Treasurer.

The **Adams County Medical Society** met with their wives at the Ingleside State Hospital on March 2nd for a fine turkey dinner.

There were approximately thirty-two members and guests present at the business session. Dr. Homer Davis of Genoa, President-elect of the Nebraska State Medical Society, spoke on some of the many activities engaged in by the State Society for the protection and improvement of the entire medical profession in the State. Dr. G. W. Sullivan of St. Edward, Chairman of the Fracture Committee of the State Society, gave a splendid resume of the work of the Committee in the State.

Dr. Herman F. Johnson of Omaha spoke on "Fractures of the Arm and Shoulder" illustrating his talk with slides and demonstrating various pieces of apparatus and material used, together with the procedures in caring for these types of fractures. His talk and demonstrations were extremely interesting and those present derived great value from them.

After the business meeting the doctors joined their wives in witnessing a moving picture show in the Chapel.

Omaha-Douglas County Auxiliary met for a dessert-luncheon on February 15, at the home of Mrs. Claude Uren with forty members present. At the business meeting which followed. the revised Constitution was read for the first time by the Revisions Chairman, Mrs. A. P. Overgaard. The members then enjoyed Mrs. Herbert F. Geralds' interesting review, "Wives of Famous Medical Men in History."

The last meeting was held on March 16, in the Pompadour Room of Hotel Fontenelle, where the exhibit of Dale Nichols' Nebraska paintings was on display. The revised Constitution was given a second reading and adopted.

Discussion of a benefit to be given later for a Serum Center for Nebraska stressed the fact that this is a state-wide project which is approved and included in our new State Auxiliary Program under Public Health.

The health film on syphilis, "For All Our Sakes" was shown following the business meeting.

Respectfully submitted,
Leona Cameron (Mrs. Olin J.).

BIRTHS

Dr. and Mrs. James G. Vetter of Omaha are the parents of a daughter, it was announced Feb. 22.

Twin sons were born to Dr. and Mrs. Paul J. Heidrick of Lincoln Feb. 18.

A son was born to Dr. and Mrs. Delbert Judd of Omaha, in March.

OBITUARIES

Dr. Wilson Orton Bridges, Omaha. Born in Canada. Was graduated from the Medical Department of the University of The City of New York in 1879. He came to Omaha in 1883. He joined the faculty of the Omaha Medical College in 1888, and became professor of Medicine. In 1903 when the old medical college affiliated with the University of Nebraska he became the head of that department, a post which he held until 1920, when he became Professor Emeritus. Due to ill health, he retired from active practice in 1929.

—Courtesy Omaha World-Herald

DR. W. O. BRIDGES

He was always an active and respected member of The Nebraska State Medicine Association, serving in various capacities during the early part of its history. He was honored with the presidency of this Association in 1898. He also served as president of the Omaha-Douglas County Medical Society and the Missouri Valley Medical Association.

Dr. Bridges is survived by a sister, and two nephews, one of whom is Dr. Willson B. Moody of Omaha.

Dr. Harry Hylton, Table Rock. Born in the year 1871, graduated from the old Lincoln Medical College in 1903. Died after a prolonged illness March 3.

HUMAN INTEREST TALES

Dr. G. A. Prachar has located in Walthill.

Dr. H. D. Kuper, formerly of Kenesaw, has moved to Leigh.

Dr. and Mrs. Elmer Hansen of Lincoln visited the South in March.

Dr. F. L. Crampert, formerly of Imperial, has located in Auburn.

Dr. J. I. Limburg, formerly of Fremont, has moved to Jefferson, Iowa.

Dr. M. H. Spangler has moved from Bushnell to Harrison, Nebraska.

Dr. G. L. Endres, formerly of Pine Ridge, S. D., has located in Omaha.

Dr. Nelson Mercer of London, England, is visiting Omaha, his former home.

Dr. and Mrs. C. W. Pollard of Omaha are vacationing in southern California.

Dr. W. A. Shreck addressed the Sacramento Town Hall on Tuberculosis, recently.

Dr. John B. Potts and Mrs. Potts are presently residing in Miami Beach, Florida.

Dr. Marshall Neely of Lincoln has gone to Ann Arbor, Michigan, for a year's study.

Dr. A. J. Merrick addessed the Fremont Nurses Association March 8, on Poliomyelitis.

Dr. E. C. Foote recently addressed the Hastings Rotary Club on his impressions of Alaska.

Dr. Frank Jensen of Newman Grove is convalescing from pneumonia in a Norfolk hospital.

The Medical library of Creighton University is the recipient of the library of the late Dr. D. A. Foote.

Dr. C. T. Gritzka of Talmage recently attended a meeting of the Missouri Pacific Surgeons at Houston, Texas.

Dr. A. E. Bennett of Omaha addressed the Junior College at McCook, February 17, on recent achievements in Psychiatry.

Dr. Russel Williams, formerly of Birmingham, Alabama, has located in Kearney, in association with Drs. Wilcox and Best.

Dr. George Haslam of Fremont addressed the Nurses Association of that city on "Surgical Treatment of Tuberculosis."

Dr. J. J. Hompes recently addressed the Lincoln Business and Professional Women's Club on "A Physician's Impressions of Japan."

Dr. John Rounds, an Ord product, has returned to his native city to practice. He is associated with Dr. C. J. Miller at the Ord Hospital.

Dr. N. F. Hicken of Omaha attended the second annual Conference of Mid-western Radiologists, February 11 and 12, in Kansas City.

Dr. J. Warren Bell of Lincoln addressed the Lincoln Business and Professional Women's Club on "Ideals in Maternal and Child Hygiene," March 6.

THE DOCTOR'S WIFE

"I'm sorry for the doctor's wife.
She leads a most unsettled life.
Though married, she must stay alone,
To take the calls upon the phone,
And in her sweetest manner say:
"I'll send him over right away!"

She cannot with assurance plan
A meal as other women can,
Or think with confidence that she
Will have her husband home for tea,
And when he's home she cannot say
How long he'll be allowed to stay.

Night after night must she behold
Her husband's dinner growing cold,
Until this speech I think she'd hate:
"My dear, I've had to operate,
And there is still a call or two
That I must make before I'm through."

The doctor has no night, no day;
No scheduled time for rest or play;
No dawn or dusk, since always he
On call to serve mankind must be,
And thus it is his faithful wife
Must lead a most unsettled life."

COWED

The curfew tolls the knell of parting day,
Along the quiet lanes the cattle come.
The plowman puts his implements away
Then jumps into his car and motors home.

—Lyre.

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PRESIDENTIAL ADDRESS

HOMER DAVIS, M. D.,
Genoa.

I am assuming the office of President of this Association in humility and with full realization of my duties and responsibilities.

It is my great desire and ambition to be of valuable service to the doctors in the State of Nebraska. I am willing to apportion a large share of my time to the Nebraska State Medical Association and hope to receive invitations from various county and district societies to meet with you so that I can talk to you about our medical problems. It will benefit me as President to become closely associated with you in this work and I hope it will likewise be of benefit to you.

Personally speaking, I want you to know that I thoroughly appreciate this honor of being your President, and, I want you to know that I shall endeavor to do my very best in the honest discharge of duty.

I have thoroughly enjoyed my term as President-Elect. It has indeed been a pleasure to have been with you in various parts of the state attending your local and district medical meetings. Our President, Dr. Roy Fouts, has been very kind to me and has given me an opportunity to serve on important committees, thus partly acquainting myself with the details of our State Association. This favor I gratefully acknowledge. The past year has been an epoch making year for our Association.

Whither are we bound? It is conceded by Christian people of today that prophets existed under the Old Dispensation. If any one today were to proclaim himself a true prophet, he would be looked upon with disrespect.

The whole world today is certainly in a state of turmoil and uncertainty. Nations, races, peoples, religious governments are all so jumbled with "isms," wars and politics that no one would dare predict what the future holds or even claim that his prophecy would prove true.

Changes are bound to occur, they always have. Some changes will undoubtedly be for progress—some for retrogression. Every situation and every condition should be thoroughly studied and investigated before a conclusion and course of action is determined. The old Proverb "Make Haste Slowly" must be observed in our Association. We must think substantially and courageously. We must keep our heads up as becomes a great and dignified profession. We must keep our feet on solid earth in order to maintain that dignity.

We can do these things both as individuals and as a State unit of the American Medical Association. We must never lose our equilibrium by becoming over elated with success, nor, can we afford to have our stamina weakened or destroyed by defeat.

Truth is mighty and above all things and not capable of improvement but we can progress in knowledge of it and its practice to the benefit of ourselves and of all with whom we come in contact.

There are periods in the history of our government in which we can go on considering only ordinary things that effect the practice of medicine. There are other periods in which we are called upon to think and plan about the very nature of government itself. Not for two generations has there been so much to consider about government in general, and government as it effects the practice of medicine, as there is at the present time.

PUBLIC FUNDS

As the State Medical Association and as doctors, we have some special problems to meet and solve. By a Federal law known as the "Social Security Act" we have become directly responsible for new conditions related to the practice of medicine. Under this act the congress annually appropriates $153,841 for the control of diseases and conditions in Nebraska. The State of Nebraska appropriates $112,092 for all health activities. This makes a total amount of $265,933 available annually, in the state, for all medical and health activities. In some of these funds the State of Nebraska is required to match Federal funds evenly.

All of these national and state activities of a medical nature can be interpreted only as an entering wedge of state medicine.

The State of Nebraska distributes these funds according to the various allocations through the "Director of Public Health." We are very fortunate in having a physician as the Director of Public Health. He has proven by his activities and interest to be of valuable aid to the Nebraska State Medical Association. He has visited all of the Councilor Districts in the State and has explained to the doctors at their meetings, the object of the use of these funds.

CRIPPLED CHILDREN'S FUND

There has been available for use in the crippled children's fund for the current year $53,750 in government funds and $53,750 in state funds. This makes a total of $107,500 for the crippled children's fund.

The funds for crippled children are administered by the State Board of Control with the advice of competent physicians and surgeons. In Nebraska it is estimated that there are about 3,000 crippled children. There had been 2,014 listed at the latest report. The State has serviced 960 during this fiscal year.

MATERNAL AND CHILD HEALTH

The fund available in this state for Maternal and Child Health education is administered by the State Director of Public Health directly through the Nebraska State Medical Association. Our association then is directly responsible for this activity through the Committee on Maternal and Child Health. The available funds for this work for this fiscal year consists of about $32,000 in government funds and over $16,000 in state funds, making a total of over $48,000.

This fund is being used to educate the profession and the lay people about the importance of care for the mother and baby. This is done on account of the high mortality of mothers and babies during the important period of gestation and parturition. It has been the determination of those in authority, and those interested, to reduce the death rate. There is evidently something wrong with the medical profession, or with the people in this country, to allow such a high percentage of maternal mortality. The condition certainly needs to be improved. If we, as doctors, are directly responsible, then we should endeavor in every way to correct our ways. The doctor who practices obstetrics should give every effort and attention to his work. It is with all of these things in view that the importance of this subject of child and maternal health should be taken seriously by the medical profession of our great state.

TUBERCULOSIS

Through the Nebraska State Medical Association has been carried on the great fight against Tuberculosis in the State of Nebraska.

The Councilor in the Sixth District, should receive especial mention for the work that has been so successfully accomplished in his district. York County has been completely surveyed for Tuberculosis and special attention has been given all active cases found in that county. York County, Nebraska, now is considered the model county survey for Tuberculosis in the United States. All of the doctors in that county gave freely of their time and expense in helping to make this survey. We hope that before this year is past many other county surveys will be made, thus adding our bit to the control of this disease in this country. In due time Tuberculosis can be completely controlled and probably will be eradicated.

SYPHILIS

Syphilis is another disease that has become a menace to public health in this country. A large percentage of our population are afflicted with the disease. It can and should be under control and in time eradicated. Through available government funds which we have spoken of before, special efforts are being made to make the public syphilis minded and syphilis conscious. Free clinics and free methods of examination are being formed to treat and control this disease. The doctors of this Association should aid this work in every way possible.

Other available government funds will probably be added for the control of, or ameliorization of, other diseases and conditions.

COMMITTEES

We have some scientific committees in our Association that have been working without Federal or State Funds. These committees should be especially mentioned and commended for their work. They have been diligent and active and have put over their programs in the state through local medical societies. They have furnished their own expenses in doing this work and their time and expense has been no small matter.

The committee that seems to have been the most active is the Fracture Committee. This committee really went out after their work of holding special fracture programs and have accomplished much.

You have been asked by our former President to become more cooperative with the Committee on Public Policy and the Committee on Campaign. I again urge you to cooperate with these two important committees. When you are asked as individual physicians for statistics or information you should do the best you can and reply promptly. When you are asked to write to your state senator or congressman, the duty should be performed promptly. You must recognize that your officers and committeemen are working for the best interests in medicine and that they need your support.

The Committee on Program and Scientific Assembly has been conscientious and diligent in doing their work. For the last three years they have added guest speakers to our program which has made our meetings more attractive to the outstate doctor. Several outstate doctors have asked me during the past year, why our annual assembly could not be conducted along the plan of the Mid-West Clinic held each year in Omaha. They have told me that they would be willing to help finance such a program by paying a registration fee. A general referendum vote of the association should be taken, with this question asked of every member in the state.

If a majority of the doctors over the state approve of this plan for our annual scientific sessions, the registration fee would help pay the expenses for a short postgraduate course scientific sessions. If the doctors in the state want this kind of a program and are willing to help pay for it, they should have it.

REVISION OF CONSTITUTION

For several years we have needed some changes in our constitution and by-laws to make it more workable for the changing conditions under which we practice medicine. We have also needed a better business set up.

A committee for revision of the Constitution was appointed by our President and have spent a lot of time and work in the formation of a new proposed constitution. This committee has had the help and advice of all of the officers of our association. Many of these officers as well as the committee for revision have been to a big expense in travel and time.

We believe that this new constitution *should* be adopted and given a thorough trial. In this new proposed set-up, the scientific committees of the Association are to have a master committee called "The Committee on Medical Health and Education."

This is a very important committee and it is planned that this committee shall be in authority over the activities of an associate bureau of scientific committees. This committee is to plan in a general way for the activities of our Association in the use of the government and state funds through the office of the State Director of Health.

The Bureau of Scientific Committees which have the use of these funds at present, consist of The Committee on Child and Maternal Health, The Committee on Syphilis and The Committee on Tuberculosis. Other scientific committees may have government funds available as time goes on. Anyway, we have the set-up for any future emergency that may come up.

Through this master committee and the particular committee in charge of this work, has come, during the past year, your Refresher Courses and Public Meetings in connection with these courses. Also, they have sponsored the lectures over the state on syphilis. They have also planned the work that has been done over the state on tuberculosis.

These Refresher Courses held in the Councillor Districts over the state, should be well attended by the doctors and should be supported in every way by them.

All of these activities are new for our Association. It became necessary for our association to assume this responsibility. If we had not done so, it would have been done by lay organizations. We hope to raise the standard of the practice of medicine in this state by taking on this responsibility.

As you have observed by reading the new constitution, there are some striking changes proposed in committee arrangement and in the general business set-up of our Association.

The most important changes are:

(a) The formation of The Board of Trustees.

(b) The centralization of all business offices in one office in Lincoln.

(c) The Executive-Secretary, in addition to his many other duties, to become the Business Manager of our State Medical Journal at the central office in Lincoln.

(d) The election of a Speaker for the House of Delegates.

We have needed for some time, a committee, to conduct the details, of the business affairs of our association. It is proposed in the new constitution to form such a committee under the name of Board of Trustees. This will simplify and centralize our business activities. It will be the duty of this board to coordinate our income with our expenditures. They are to pass on all recommendations for incurring expenses and prepare and present an annual budget. They are to determine all salaries, supervise and direct all official publications, appoint an editor for our Journal, establish and maintain the official headquarters of our Association at Lincoln, acquire, hold, maintain and dispose of such monies and property, personal and real as may now be, or shall hereafter come into possession of our association.

The Executive Secretary has been employed by the Council for another year. There has been some discussion by the members over the State as to the wisdom of raising our State Medical dues to cover the salary and traveling expenses of this employee. In answer to this criticism of the management of our Association, may I say, that the business volume and correspondence of the Association has assumed such a proportion since we have taken over new activities that it is a full time business man's job.

With the proposed changes in the Constitution, the office of Executive Secretary should become an asset instead of a liability. There is no doubt in my mind but that the publishing of the monthly confidential bulletins by the Executive-Secretary has been of much value to our Association. He has done much in getting new members. He has done the detail work in arranging the Refresher Courses. He has been of valuable assistance to several of our important committees. He was a busy man during the last session of our State Legislature and no doubt helped in securing desirable legislation and also helped to defeat undesirable legislation.

By concentrating all of our business in one office in Lincoln we have estimated that there will be a saving to the association. We hope that in the plan to have the Executive-Secretary act as business manager for our State Medical Journal we shall increase our income from the Journal through an increase in advertising. Other states have done so, why should we in Nebraska not be able to do so? Some states have increased their income in this way to an amount which more than pays the expenses for a central office including the salary of the Executive-Secretary. This is a new field which never before has been worked out in our state.

In the changes proposed by our new constitution the direct management of the State Journal will be taken to the central office in Lincoln. This change promises a saving in duplication of office rent, clerical expense, postage and telephone charges.

The Committee on Medical Defense in the proposed new set-up will work through the Executive-Secretary at the Central Office in Lincoln. The Medical Defense committeeman who has been receiving a regular salary of $600 per annum with some office rental also allowed, will in the future work on a basis of actual time spent in this work. This should result in quite a saving of expense for our Association.

The past year has been one of marked progress for our State Medical Association. We sincerely hope that the coming year shall also be a year of progress and harmony.

THE ACUTE ABDOMEN IN CHILDREN—APPENDICITIS

H. B. HAMILTON,
Omaha.

A paper on appendicitis is justified by the following statements: "The death rate of appendicitis has not decreased since Murphy's day, and stiill remains at about 10% despite better operative technique." It continues, "Two-thirds of that mortality occurs below the age of 12 and above the age of 40, although not more than one-third of all cases of appendicitis occur within those age groups."

Aynesworth, quoting Fitz, says, "the mortaliity of acute appendicitis in 1900 was 8.7 per 100,000 of the population. In 1934 the death rate from the same population was 14.7."

Dr. B. B. Davis read a paper in 1930 on the subject, "Why is the mortality of Appendicitis Increasing?" After a study of the U. S. vital reports for the years 1900-1927 inclusive, he stated that the mortality had increased during that time by 54.6%. He places the responsibility for the increased mortality on the patient himself, the physician first called, and the surgeon.

It is the location of the appendix that makes it important. For instance, if the same infectious processes were in the little finger they would be relatively unimportant, the problems of diagnosis would be simplified, errors in diagnosis would be less tragic, late diagnosis and treatment would scarcely exist. But the childhood appendix is located in the peritoneal cavity. It is rich in lymphoid tissue. It is protected by an omentum poorly equipped to furnish an adequate barrier to extending infection by reason of its shortness and lack of development. The child's appendix is in an individual subject to frequent infections of a general character whose organisms may find lodgement in the appendix. The child's appendix is in an individual from whom or from whose attendants it is more difficult to elicit symptoms and their order of onset. It is in an individual whose symptoms are simulated more readily by other conditions. It is in an individual whose body has 10% more water and can withstand its loss less well. The younger the child the more difficult is an early diagnosis of appendicitis. Again the position of the appendix may add to the confusion. The writer has had in his own cases the appendix located under the liver and again low in the pelvis and practically any place between. Its tip may be pointed in any direction. If complete rotation of the colon has failed, the appendix may be found in the left iliac region. Again there are various conditions found with reference to the peritoneal covering. Different sorts of peritoneal attachments may exist which interfere with the shape and drainage of the appendix.

The writer would admit that with a diagnosis of appendicitis the treatment is surgical and for the purpose of this paper dismiss that part of the problem. Murphy years ago taught that the onset was generally of a progressive and definite order, pain, nausea or nausea and vomiting, tenderness and fever. The child is more subject to infections than is the adult. Many of these are associated with discomfort in the abdomen. The most common abdominal pain which the writer sees in the child is that associated with respiratory infection. Brennemann has written much as regards this relation of respiratory infection and abdominal pain. Every doctor has repeatedly found this condition to exist. Infections being so frequent in the child, naturally an increase of temperature is the common finding. Likewise, the child vomits much more easily and frequently and from many different causes, in contradistinction to the adult. In fact, with an infection of any character there is likely to be nausea and vomiting. As remarked above, the abdominal pain is also a more frequent finding in the child than in the adult and more difficult to evaluate. The localized tenderness in the abdomen is not so common and is a valuable finding in differentiating between inflammatory conditions in the abdomen and those due to mechanical or other reasons. Intussusception, for instance, is associated with marked pain, but little tenderness. In appendicitis, on the other hand, there may be abdominal pain, but the tenderness is marked. With abdominal symptoms associated with respiratory infection the pain is more marked than the tenderness. In other words, tenderness is a constant association of inflammation.

Appendicitis in its earliest hours is not associated with a high temperature. A temperature of 102 or more is very much against appendicitis. Early, a high temperature most certainly means something else than appendicitis, and late that the process has gone beyond the appendix. No one would think of making a diagnosis of appendicitis without the presence of tenderness usually about McBurney's point, or a history of its having been present. This symptom is the most constant and most valuable in leading to a diagnosis.

Study of 99 cases admitted to University Hospital in 5 years with diagnosis of appendicitis:

81 cases were operated for appendicitis.

76 cases operation confirmed diagnosis of appendicitis.

5 cases operated were found to have some other trouble.

Of the eighteen cases not operated:
1 had appendicitis with diphtheria.
9 had respiratory infection.
2 had gastro-enteritis.
1 had pyelitis.
1 broke out with measles.
1 was diagnosed as malnutrition.
1 had otitis media.
1 case "chronic appendicitis" operated for strabismus.
1 was a psychosis.

Of those operated but proved not appendicitis:
1 had pneumococci peritonitis.
1 had throat infection. Appendix negative.
1 had history of previous attacks. Appendix negative.
1 had lobar pneumonia.
1, nine years old, had cholecystis.

Age incidence was as follows:
3 yrs.—1 case.
4 yrs.—2 cases.
5 yrs.—2 cases.
6 yrs.—2 cases.
7 yrs.—8 cases.
8 yrs.— 9 cases.
9 yrs.—11 cases.
10 yrs.— 9 cases.
11 yrs.—19 cases.
12 yrs.—14 cases.

Symptoms:

56 of the 76 cases operated and diagnosis confirmed had typical findings in the following order: Pain, nausea and vomiting, tenderness and fever.

28 of the 76 operated had history of previous attacks.

20 of the 76 operated had atypical symptoms.
10 of these 20—history of previous attacks.
2 of the 20 were "chronic appendicitis."
3 of the 20—nausea first symptom.
1 of the 20—abscess. No history of nausea or vomiting.
1 of the 20 was an ectopic kidney. Scarred appendix.
1 of the 20 followed an attack of measles.

Previous History:

Of the 76 cases operated 40 had upper respiratory infection preceding, or during course of disease.
1 had scarlet fever contracted in the ward.
1 had tuberculous peritonitis.
1 had measles the preceding week.
1 had pin worms in the appendix.

Temperature in nonperforated:
97.8—1
98.0—3
98.6—5
99.0—7
99.4—2
99.6—6
99.8—2
100.0—5
100.4—2
100.6—4
101.4—1
103.0—1
103.6—1

Duration of symptoms in the nonperforated group:
4 hr.—1
8 hr.—2
12 hr.—2
24 hr.—11
3 days—1
4 days—2
7 days—2 (1 died)
2 wks.—2
1 mo.—4
6 wk.—1

Leucocyte Count:

Unperforated cases ranged from 5,750 to 37,600.

13,550 average white count for operated, nonperforated cases.

Perforated cases ranged from 10,050 to 43,950.

19,600 average white count for the perforated cases.

29 of the cases operated were perforated.
12 of these had received cathartics.
4 of these had history of previous attacks.

25 of the 99 studied had a history of having been given cathartics.

Duration of symptoms in the perforated group:
6 hrs. — 1
18 hrs. — 3
24 hrs. — 4 (1 died)
2 days—8 (1 died)
3 days—4
6 days—2
7 days—1
9 days—1
10 days—4
11 days—1

Temperature in perforated:
98.2—1
99.0—1
99.6—2
99.8—1
100.0—1
100.2—1
100.6—1
101.0—3
101.4—2
101.6—5
101.8—1
102.2—3
102.6—1
103.0—2
103.2—1
103.8—2

% of polys—perforated cases:
1—98
1—96
1—94
1—92
1—91
2—90
4—85-90
7—80-85
4—75-80
2—70-75
1—60
4—unrecorded

SUMMARY

The mortality of appendicitis has increased rather than decreased. In the child, diagnosis is more difficult than in the adult. Diagnoses are made later as a result. The order of onset, pain, nausea and vomiting, tenderness and temperature obtain in the child, as in the adult, if a careful search into the history is made.

WHOOPING COUGH

Dr. Thorwald Madsen, Director of the Serum Institute, Copenhagen, and President of the Health Section of the League of Nations, recently reported that research in Denmark has led the health authorities in that country to the universal vaccination of children against whooping cough.

A vaccinated group of 3,900 showed a lessening of severity of the disease and a shortening of the period.

In this same group there were but six deaths. In a control group of 1,000 unvaccinated children there were 26 deaths.

Denmark hopes to bring whooping cough under the same control as smallpox and diphtheria by the vaccination method.

PYELITIS

J. CLYDE MOORE, M. D.,
Omaha.

In general practice the term pyelitis is often used rather roughly to cover almost any condition in which pus is found in the urine. It would be better if we termed these cases pyuria and then endeavor to ascertain the source of the pus.

Pus may enter the urine from vaginal discharge, from a cystitis, from a urethritis, a renal infection or possibly from some extra renal abscess. Tuberculosis may be a cause of pyuria. It may be the result of some extra renal infection such as acute diarrhoea, tonsilitis and the various infectious diseases. The important point when pus is found in the urine is to be as sure as possible where it is coming from. To rule out contamination from outside the specimens should be carefully obtained. In the male child, the urethral opening should be carefully washed and the first part of the urine collected separately from the rest. The latter part is free from the urethral contamination and gives a truer picture. In a girl, the external genitals should be carefully cleansed with boric acid before the urine is collected. If the urine is to be cultured, the child, boy or girl, should be catherized and the urine collected in a sterile container. To determine the presence of pus, a specimen is taken from a well shaken but uncentrifuged specimen of urine and examined under low power of microscope. The average specimen from the boy will show normally from 0 to 3 or 4 cells per low power field, while that from the girl will average from 8 to 10 cells.

DEFINITION

In this brief discussion we will confine ourselves to acute infection of the urinary passage manifested by the presence of bacteria and pus in the urine arising from the bladder or from the upper portion of the urinary tract.

ETIOLOGY

Frequency: The condition is very frequent. Helmholz estimates that it makes up about 1% of the pediatrician's practice.

Age: Most frequently seen in children of diaper age. Except possibly in the neo natal period, it is from 4 to 5 times as common in girls as in boys. In my own practice it is very unusual to find it in boys.

Bacteria: Gram negative bacilli of the colon aerogenes group are the infecting organisms in about 80% of cases. Streptococci and staphylococci are the next most common infecting organisms.

MODE OF INFECTION

Acute urinary infections due to streptococci or staphylococci are of hematogenous origin. The organisms are carried in the blood stream from distant foci of infection to the kidneys. They may lodge here in the glamerular tufts or in the capillaries of the interstitial tissue. The result is usually military abscesses in the kidneys. The infection due to the colon group of organisms is thought by Helmholz to be of the ascending type. Experimental work in rabbits seems to favor this route of infection. Spontaneous infection in rabbits shows the following stages of the diseases named in order of frequency: cystic bacilluria, cystitis, pelvic bacilluria, pyelitis and pyo nephritis. Other reasons for believing that the ascending route is the mode of infection—First, preponderance of cases during diaper age and marked preponderance in female babies with short urethra, second, infrequency of colon B in blood, third, the fact that there may be ureteral obstruction without infection until infection is introduced from below.

SYMPTOMS

In the infant the condition usually comes on suddenly with convulsion or chill, high fever, restlessness and pallor. There may be an increased frequency of urination or there may be no symptoms pointing to the urinary tract. Physical examination shows nothing to account for the high fever.

In many cases the temperature is of the septic type; in others it remains on a high level and suddenly drops by crisis.

In the older infant the point which has impressed me the most is that the infant will run a high temperature and still not appear to be nearly as septic as one would expect with the height of the temperature. A frequent complaint in older children is intermittent abdominal pains. This is so frequent that in every case of abdominal pain, I feel that it is important to rule out pyelitis. It must be remembered, however, that a few pus cells may be found in the urine in appendicitis so that a careful physical examination must exclude the latter. A blood examination may be of some help in the differential diagnosis. (Usually in pyelitis there is only a moderate leucocytosis with very little increase of polys, in appendicitis the poly count particularly is increased).

In pyelitis especially in the older child, tenderness may be elicited over the renal region.

PATHOLOGY

Deaths from uncomplicated pyelitis occur so infrequently that there have been very few post-mortems. Chowin reports a number of cases, 9 from literature and several of his own, and concluded that the lesion of pyelitis is a multiple focal suppurative interstitial nephritis with an occasional association of some degree of pyelitis and rarely cystitis

Helmholz describes this type as due to the coccal bloodstream infection. In the most common type due to the colon aerogenous group, the lesions are first, cystitis, then pelvic bacilluria, then pyelitis and in the occasional case of pyelo-nephritis.

DIAGNOSIS

The finding of a marked increase in pus cells in the urine, if external sources of contamination are ruled out, when combined with either a toxic or febrile condition otherwise unexplained, is sufficient to make the clinical diagnosis of "pyelitis" probable. Especially if this finding occurs in a girl baby of the diaper age.

In some cases of unexplained fever in the female infant no pus will be found in the urine until the fever breaks; then a large amount may be noted. When there is doubt, one negative urine is not sufficient to disprove the diagnosis. In an occasional case all that is found is a bacilluria. It is still a true pyelitis. Of course the bacilli must be found in the fresh catherized specimen.

In cases requiring careful urological examination to locate the particular source of the infection, the services of a urologist should be called for. In the chronic cases not responding to medical treatment, there is usually some anomaly or organic obstruction present. Cystoscopic examination—pyelograms—kidney function tests—ureteral catherizations, etc., all have their importance in these detailed examinations. In infants however, urological examinations are not necessary in the big majority of cases and should not be entered into lightly, and when weeks or months of failure or the extreme severity of symptoms should make it necessary, an expert should be called in.

TREATMENT

In the treatment the main objects are, 1., By medicinal treatment either produce bacterial stasis or actually kill the organisms., 2., free diuresis to obtain adequate drainage, 3., remove all foci of infection, 4., correction of all mechanical obstruction to free renal drainage, 5., general treatment of toxemia such as control of fever, proper bowel elimination, rest, etc. Were the proper facilities available at all times to every one, the proper procedure would be to catherize the patient and culture the urine so as to know what type of infection was being cared for. However, in general practice it is necessary to compromise somewhat with the ideal and treat the case as well as we can under the conditions. The following is the plan of treatment which I have used with quite good clinical results. For 5 days I give 15 grs. of soda bicarb 4 times a day in 1 tablespoon of water. At the end of the 4 days I examine the urine. If it is alkaline to red litmus paper or nitro benzol paper, I stop the soda and put the child on either acid sod. phosphate or ammon chloride with urotopine. I continue this for 4 or 5 days and then return to the alkaline therapy. In a child old enough to be on a general diet, I stop meat and eggs during the period of alkaline therapy and give them again during period of urotopine treatment.

Helmholz states that a P H as acid as 5.0 or as alkaline at 9.2 is necessary to affect bacterial growth in urine. An alkalinity of P H 8.4 practically is never obtained so that there is no possibility of bacterial growth being affected by alkalinization. Clinical experience however has shown it to be of value but the exact modus operandi is not known. Acidification of urine to a point as low as P H 4.8 can be brought about by the use of calcium chloride, ammon chloride or ammon nitrate 0.5 gr. calcium chloride given 4 times a day for 1 day will usually reduce the P H to sufficient point.

Some have advocated the use of the ketogenic diet to produce the necessary acidification. The presence of beta oxy butyric acid in a concentration of more than 0.5% in a urine of a P H 5.5 or less will prevent the growth and destroy colon bacilli.

In proper hands and hospital control this method has given some very good results.

Recently mandelic acid has been introduced to get the same results and is much simplier in administration. A concentration of this acid of 0.5% and at a P H range of from 5.0 to 5.5 is bactericidal for organisms of the colon aerogenoues group as well as for the coccus group. A 40% Syrup of ammonium mandelate is used in doses of 0.5 to 1 gr. four times a day for infants and small children and of 2 to 3 grs. four times a day for children from 10 to 15 years.

Sulfanilamide is the latest drug to be used. Helmholz reports a number of cases in which it has been used with good effect. He concludes that its ease of administration, its use in the acute stage of the disease, its action in an alkaline urine, and its successful use in cases of renal insufficiency, make it a drug of great usefulness in treatment of acute and chronic infections of the urinary tract.

FUNCTIONAL DYSMENORRHEA*

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In reviewing the most recent literature on the subject of dysmenorrhea, most articles start with the statement that this symptom and complaint is truly the bug-bear of gynecology and medicine. The reason for this is very obvious. There are many possible causes for this symptom, and the difficulty lies in discovering the causative factor in each case. To do this requires patience and ingenuity on the part of the physician and patient,—and in some cases even this is not enough—as the severe dysmenorrhea persists in spite of all treatment.

Dysmenorrhea has been divided into two large classes: (1) organic and (2) functional. The organic causes may be due to intrinsic or extrinsic factors. The intrinsic cause may be: mechanical obstruction of cervix (stenosis, flexion or clots) or Hypoplasia of the genital organs. The extrinsic causes may be: diseases of the pelvic organs; as ureteral stricture, appendicitis, colitis, salphingitis or disturbances of the vegetative nervous system or constitutional diseases such as chronic constipation, malnutrition, anemia, posture, poor muscle tone, low basal metabolic rate and vitamin deficiency. Treatment of organic dysmenorrhea consists of removing the organic defect by such means as: operative procedures (dilatation and curettage, use of the Baldwin stem pessary or the obstetricians favorite suggestion "pregnancy") or general constitutional measures and endocrine therapy.

In this paper, however, I wish to deal only with the functional causes of dysmenorrhea and the different kinds of therapy advocated today. By functional dysmenorrhea I mean painful menses which have no apparent organic basis; the symptom complex evidently arising from some abnormal physiological process. Some of the functional causes are: psychogenic, endocrine malfunctions, allergy and perhaps some inherent malreaction of the uterus itself. I would like to dismiss the subject of psychogenic dysmenorrhea by saying that its treatment is successful by psychological means;—by removal of the cause of conflict, if possible.

The many remedies advanced for the treatment of functional dysmenorrhea is strong evidence that none has been found to be entirely satisfactory. This foretells that the causes also are varied and many and I agree with many writers who have reviewed the literature and made a statistical study of clinical cases that there is no one theory or combination of two theories capable of explaining all cases of primary or essential dysmenorrhea(13). If, however, cases resembling each other can be classified and then treated long enough to evaluate results, perhaps eventually one can standardize a satisfactory routine of treatment. Not until the problem of dysmenorrhea is treated as a scientific one and not as a mystery will the true etiology and therapy be evolved.

Probably the endocrine dysfunction or imbalance theory as to the cause of essential dysmenorrhea is the favorite one today. The work of Reynolds and Novak(10) in this country and Knaus of Austria proves that this idea is a logical one, but treatment with the various endocrine products on the market does not give us as significant results. Studies by Reynolds on the unanesthetized rabbit's uterus show that during the oestrous phase there is marked uterine activity and that the anestrus phase is characterized by only feeble motility, if any at all. Translating these experiments to the human problem, we learn that human uterine contractions become increasingly more active as the graafian follicle develops. After ovulation and corpus luteum formation, the uterine contractions are inhibited, so that during the last half of the menstrual cycle the uterine muscle is relatively quiescent. Further, castration experiments show that the follicular hormone alone stimulates uterine activity and progestin, or the corpus luteum hormone, inhibits uterine motility. That the height of corpus luteum activity is several days before the onset of the menstrual flow has been demonstrated by excision of the corpus lutea; the menstrual flow occuring twenty-four to forty-eight hours later(21). From these experiments one can reason that all menses start several days after degeneration of the corpus lutea, but the question immediately arises—all menses are not painless,—what causes the pain in primary dysmenorrhea? What is the unapparent difference between the non-painful menses and the opposite spasmodic, colicky cramp-like pain that characterizes some women's menstrual periods? Witherspoon(21) says that two explanations can be offered: (1) Some women have a heightened sensitivity to pain stimuli and therefore notice the contractions of the uterus when the inhibiting hormone is removed. (2) That there is a real endocrine imbalance acting on uterine motility—either too much follicular hormone, over amount of progestin or the follicular stimulation of the uterine comes on too suddenly after withdrawal of the corpus luteum inhibiting influence. Theoretically the treatment of dysmenorrhea due to endocrinal influence should be to counter-balance the excessive follicular hormone by substituting additional corpus luteum hormone. This has been done by many workers with discordant results. Witherspoon(21) tried Follutein (Squibbs) giving 1 cc. daily three to four days previous to flow and first two days of flow for three consecutive months. Seventy-six per cent of his cases obtained relief. Workers at the University of Rochester(12), New York have experimented with Progesterone, supplied by Shering Corporation, and obtained complete relief in only forty-seven per cent of cases. Progesterone was administered in single or divided doses three to six days before the onset of the menstrual flow. Stacy and Shoemaker(16) have tried Estrin, Emmenin, Progynon and Sistomensin with relief in only fifty per cent of cases. Dr. S. Leon Israel(8) has tried the two forms of endocrine treatment with Estrogenic and Gonadtropic hormones, both gave disappointing and no permanent results.

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The experiment, which best answers the question, why menses are painful in some otherwise normal women, is one by Moir(11). He used an intra-uterine bag and obtained records of uterine contractions and pressure readings in a patient with dysmenorrhea and a normally menstruating woman. The chief point of difference was in the pressure which reached a maximum of 150 mm. of mercury in dysmenorrhea as compared with 120 mm. of mercury in a normal woman. From this experiment one could believe that the increased amount of pressure produced by the dysmenorrhic uterus by exaggerated contractions could give rise to painful stimuli.

D. J. Cannon(2) discusses Whitehouse's theory of the cause of dysmenorrhea. Whitehouse observed that abnormal separation of the menstrual decidua is invariably associated with dysmenorrhea and that the amount of pain was proportional to the size of the decidual fragments. He infers from this finding that painful menses are due to over-activity of the corpus luteum hormone, which in turn is due to over-activity of luteinizing hormone of the anterior pituitary body. The Progestin (or corpus luteum hormone) has the function of promoting the excretion of folliculin from the blood. From this one would expect during the premenstrual cycle a decrease of folliculin in the blood and an increase in the urine. Since Cannon postulated this theory in June, 1936, Doris Phelps(11) has proven his idea by means of some interesting experiments on the effect of dysmenorrheic urine on uterine motility. Urine excreted during dysmenorrheic cramping shows a marked increase in the oxytocic activity together with a less marked, but significant decrease in the inhibitory activity.

That endocrine dysfunction is not the whole answer to the question of dysmenorrhea is plainly seen by the number of poor results with treatment of the ovarian and pituitary hormones. Based on the theory that painful menses are caused by exaggerated uterine contractions—many smooth muscle antispasmodic drugs have been used—atropine, benzl-benzoate, and a new drug by Ciba, called Trasentin. Other drugs to deaden painful stimuli—as alcohol and opiates—have been used too often and over too long a period of time when the real cause of the uterine contractions has not been found. For occasional dysmenorrhea opiates may be necessary and useful, but for severe and persistent dysmenorrhea there is a cause and it should be diligently searched for.

Other possible causes of painful uterine contractions during the menses recently suggested are: allergy(4)(15), hypoglycemia(17), avitaminosis(5). D. R. Smith and Capt. Dutta independently have shown that the uterus is susceptible to allergic conditions and responds to them by contractions which may be painful. Their work suggests that some cases of dysmenorrhea of unknown origin may be due to allergic conditions. The offending substances may be determined by the history and skin tests and then treated by desensitization or by avoidance of allergens. The attacks of painful menses are always relieved by injection of adrenalin.

The latest report from Dr. Norman Miller(9) at Ann Arbor, Michigan, on the relationship between poor posture and dysmenorrhea, shows that there exists no cause and effect relationship. (Based on present day standards of posture).

In some cases of hypothyroidism associated with dysmenorrhea thyroid therapy has relieved the discomfort at menstrual periods. Sometimes thyroid extract tablets also help patients with dysmenorrhea who have a normal basal metabolic rate(14).

The nausea, vomiting and faint feelings associated with dysmenorrhea suggested to Drs. Tedstrom and Wilson(17) the hypoglycemia therapy. Fasting blood sugar studies showed no uniform variation in fasting blood sugar levels at menstruation as compared with the mid-menstrual level. Eighty per cent of their dysmenorrhea subjects showed a lower blood sugar during menstruation. (Below 80 mgm. per 100 cc. of blood). These patients were relieved by high carbohydrate feedings and intravenous glucose immediately, but the fact that carbohydrate feeding and intravenous glucose also helped patients with normal or high blood sugars discredits their theory somewhat and makes one skeptical.

Not much is heard about the Elliott treatment of dysmenorrhea(3) but a high per cent of relief can be obtained by this method, although there may be no permanent results and treatment at each painful period may be necessary. As most of you know, the Elliott machine would not be absolutely necessary for this internal hot water-bottle principle to be used.

For those severe and persistent cases of dysmenorrhea which none of the above suggested therapies help there are some more drastic procedures available. Alcohol injections of the superior hypogastric plexus have been tried successfully by Flothow(6) of Seattle. The technique, however, is difficult and should only be tried by experienced surgeons.

Roentgen Ray radiation, far short of the castration doses—1/20 - 1/10 (25 to 40 R.) to each area treated—offers a high per cent of complete remission of most disturbing of symptoms and a larger per cent of cures. Sometimes Dr. Trostler(18) has irradiated the pituitary region alone with satisfactory results.

I found only one case report of intraspinal injection(7) of seven per cent alcohol into the fourth lumbar space for intractable dysmenorrhea. The technique is the same as for lumbar puncture and intrathecal injection of serum and the results seem excellent. This patient has had eight normal menstrual periods free from pain,—without further treatment. However, I would not use this treatment or recommend it until more has been learned about the cause of its success.

X-ray and radium exposures to induce sterility and an artificial menopause have been used as a last resort, as has hysterectomy(1), and resection of presacral nerves(6)(19). This last operation (resection of presacral nerves) has given a large per cent of complete relief and in the hands of good surgeons, who find and cut all the fibers of the superior hypogastric nerves, offers an excellent outlook for those intractable cases of dysmenorrhea. Resection of the presacral nerves does not interfere with ovulation, menstruation, conception, or childbirth.

Malnutrition has long been known as a constitutional cause for dysmenorrhea. Dr. Altschul in using insulin for its metabolic stimulating effect in malnutrition found in dysmenorrhea patients an absence of painful menses while under treatment with insulin. He thought that the improvement of the dysmenorrhea with insulin was due indirectly to the resultant improvement in nutrition, so he decided to try the direct effect of insulin on a patient without malnutrition during an attack of dysmenorrhea. He noted relief in ten out of twelve cases. I became interested in this new easy method of treatment and decided to try it on a few cases. My interest was stimulated by Dr. Miller's(10) (of New Orleans, Louisiana) remark that probably all the glands of internal secretion play their part in the female menstrual cycle and bear a distinct relation also to the nervous and emotional constitution of women, also by the well known, but frequently forgotten, fact that the sex glands of girls and women are stimulated by the use of insulin(20).

I have followed a small series of ten cases for five to six months, giving Squibbs regular insulin, five units daily before lunch for three to five days before each menstrual period for two to three months. The anti-diabetogenic effect of insulin was controlled by the following meal. Eight out of ten cases (or 80%) were subjectively benefited while under treatment and three have been objectively helped, so far. Further observations and more case studies are necessary before I can say whether or not this work has any permanent effects. The following chart gives a summary of the case studies to date.

	Age	Menarche	Duration of Symptoms	Onset of Pain (Relation to Flow)	Number of Injections	Duration of Injections	Subjective Results	Objective Results
L. M.	26 yr.	11 yr.	15 yr.	1st day	3 mo.	6 mo.	Pain relieved	1 month
I. R.	16 yr.	12 yr.	1 yr.	1st day	3 mo.	6 mo.	Pain relieved	2 months
H. S.	19 yr.	12 yr.	4 yr.	1st day	3 mo.	6 mo.	Pain relieved	1 month
R. R.	18 yr.	12 yr.	5 yr.	1 day before flow	2 mo.	5 mo.	Pain relieved	No
N. M.	25 yr.	13 yr.	8 yr.	1st day	3 mo.	3 mo.	Relief	No
A. S.	30 yr.	15 yr.	10 yr.	7 days before flow	2 mo.	5 mo.	Relief	3 months
O. W.	25 yr.	11 yr.	9 yr.	1st day	3 mo.	5 mo.	Some Relief	No
M. B.	17 yr.	11 yr.	7 yr.	1st day	3 mo.	6 mo.	Relief	1 month
G. W.	20 yr.	13 yr.	6-7 yr.	1st day	3 mo.	6 mo.	No Relief	No
S. E.	29 yr.	13 yr.	10 yr.	1st day	3 mo.	6 mo.	No Relief	No

The following menstrual history was the one used in this study:

Name.. Age......................
Ht............ Wt............ Body Build.............. B.M.R...............
Onset of Menses: (Pituitary function) Regularity: (Pituitary and Ovarian function) Duration: (Ovarian and Uterine function)
Quantity: (Ovarian and Uterine function) Clots: (Ovarian function)
Type of Pain: Time of Pain in Relation to Flow:
Nausea or Vomiting: Fainting:
Skin Manifestations During Cycle:
Mastalgia (Ovarian function):
Allergic History:

Dr. Alex Altschul and others have hinted that insulin may work through its hypoglycemia effect. Efforts to control the anti-diabetogenic effect of insulin and blood sugar studies would seem to discredit this hypothesis. At present, I believe that insulin therapy in functional dysmenorrhea is successful because of its stimulating effect on the ovaries.

The study of Insulin treatment for functional dysmenorrhea needs further investigation and study. So far, the results indicate that it has as much value as the other endocrine products. The next step to determine is whether one injection at the time the cramp-like pains begin is sufficient. A single injection for occasional attacks of functional dysmenorrhea has helped in a number of cases.

In the final analysis perhaps all cases of functional dysmenorrhea are disorders of an endocrine dysfunction or some inherent malreaction of the uterus and the reason for the large number of failures with the endocrine therapy may be due to the fact that the malfunctioning gland or glands are not discovered or corrected.

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TREATMENT OF METASTATIC CARCINOMA OF NECK SECONDARY TO CARCINOMA OF LIP

R. B. Moreland, Hines, Ill. (*Journal A. M. A.*, April 2, 1938), discusses the results in thirty-one cases of metastatic carcinoma of the neck secondary to that of the lip. Twenty-eight of these patients are free from disease from a few months to more than three years. Dissection of the neck is advocated when the primary lesion of the lip has been controlled and when there are enlarged cervical glands thought clinically to be metastatic. Preoperative irradiation is not given. Postoperative irradiation, from 3,000 to 4,000 roentgens, is given in all cases in which the glands are microscopically positive for carcinoma. Observation is advocated when enlarged cervical glands are thought to be inflammatory. Improving the condition of the mouth is all that is necessary in most of these cases. When the cervical glands are not enlarged, neither irradiation nor neck dissection is advocated. Neck dissection can be done as successfully after the glands are enlarged as before, provided operation is not deferred until the glands are large, fixed, ulcerated and inoperable. Combined external and intestitial irradiation is employed in far advanced, palliative cases. Probably no other tumorous condition is treated in more ways, or regarding which opinion is more divided and treatment less standardized, than in metastatic carcinoma of the neck.

All forms of rational play may produce a deep pleasurable motivation to constructive activity and the balance for a hygienic regimen of living so necessary in our hurrying and hurried age.

Constant unsympathetic treatment to a child must almost certainly develop a deep feeling of inferiority or of resentment.

INDICATIONS FOR THE USE OF THE FEMALE FOLLICULAR SEX HORMONE

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There is scarcely a condition in Gynecologic practice in which an endocrine disturbance does not play a part, either as a cause or as an effect. Therefore, no treatment of any Gynecologic affection can be adequate unless, at least, due consideration has first been given to the possibility of an endocrine influence upon the objective and subjective symptoms which one is attempting to relieve.

It is not the purpose of this brief presentation to attempt to give a comprehensive outline of female endocrine therapy. It is proposed, however, to emphasize here the importance of recognizing a frequent relationship between the endocrines and many of the complaints about which our women patients consult us. That relationship can perhaps best be illustrated by a consideration of some of the symptoms and complaints which have responded favorably to the administration of the ovarian or follicular sex hormone.

The female follicular sex hormone, Estrin or Folliculin, is elaborated by the Graffian follicle during the first half of the menstrual cycle and by the Corpus Luteum, together with Progestin, during the second half of the cycle. During pregnancy it is formed in the Corpus Luteum of Pregnancy and, also, in large quantities, in the Placenta. The amniotic fluid is loaded with this hormone. It is eliminated in large quantities in the urine of the pregnant female. Commercially it is extracted from placental tissue, from amniotic fluid and from pregnancy urine. It is available to us under such trade names as Theelin, Amniotin, Emennin and Progynon.

In order to recognize the indications for the use of this hormone in every-day practice one must, of course, be aware of the part it plays in the growth of the reproductive organs of the adolescent girl and in the appearance and development of the secondary female characteristics, the breasts, the body contour, the hair distribution, the voice and the charactertistic personality changes of puberty.

Again, to recognize the indications for the use of Estrin in the relief of menstrual disorders, one must be familiar with the influence this hormone exercises over the endometrium, with its relation to the cylic hyperplastic changes and with the retrograde changes which occur in the endometrium when the hormone is withdrawn and menstruation ensues.

Furthermore, one must recall that, after conception has occurred and further maturation of follicles in the ovaries ceases, a tremendous amount of Estrin is produced in the placenta as well as in the Corpus Luteum of Pregnancy. During pregnancy Estrin aids in preparing the breast for lactation. At the same time, it inhibits in the hypophysis the production of the Lactogenic Hormone without which lactation cannot take place. The Lactogenic Hormone is not released until after the placenta has been expelled and the inhibiting influence of the ovarian follicular hormone has been removed.

Throughout the reproductive period one encounters frequent evidence of marked deviations from the normal amount of Estrin. One need only call attention to the severe menorrhagias in which abortion, inflammation, misplacement and neoplasm can be ruled out, but in which a diagnostic curettage reveals a thickened, soft, hyperplastic endometrium. Extending the search for a causative factor, one is likely to find an enlarged ovary whose capsule is thick and elevated by numerous cystic follicles which have been unable to rupture through the thickened capsule or which have failed to go on to maturity because of an inadequate stimulus from the Anterior Pituitary. The menorrhagia here points to an excessive Estrin influence resulting in stimulation of the endometrium to a state of hyperplasia.

Just as frequently, however, one meets with evidence of an Estrin deficiency. In the adolescent girl, in whom puberty is delayed and the development of the secondary sex characteristics is retarded, we are usually correct in our assumption that such a hormone deficiency exists. We then supply the deficiency either by administering the follicular hormone or by using the gonadotropic hormone of the Anterior Pituitary to stimulate the girl's own ovaries to a normal production of Estrin.

In the woman who has reached maturity and who is sterile the deficiency often suggests itself, particularly if there is evidence of genital infantilism or if there is a history of amenorrhoea or of oligomenorrhoea.

Again, at the menopause, when vasomotor and temperamental and personality changes appear and when the menses grow scanty, less frequent or cease altogether, there can be no doubt as to the etiology of these symptoms. We are certain that the production of Estrin has slowed down or ceased.

One is not apt to overlook a follicular hormone deficiency as the etiologic factor in the instances which have been cited, in retarded puberty, in genital infantilism, in the sterile amenorrhoeic or hypomenorrhoeic woman and in the subjective complaints which accompany the menopause.

There is, however, another group of women in whom a deficiency of this hormone is not so readily recognized and is, in fact, frequently not even suspected. These patients usually appear to be normal, well-developed women. They may be in their thirties or even only in their early twenties. There is nothing suggestive in their menstrual histories. Their periods have always been and are still regular and normal. They may have borne children regularly and even recently. They are more apt, however, to have borne one or two children eighteen or twenty years ago and then, as a matter of choice or of economic expediency, have avoided a repetition of the ordeal of pregnancy and labor. In this group one also finds those spinsters whose life has been one of continuous repression and frustration and stress,—a continuous, subconscious conflict between the actual and the desirable. Others are widows who lost their husbands early in life. In this group one finds practically all those women whom, after hearing their complaints and after negative physical and laboratory examination, we have been all too ready to classify as hysterics or as psychoneurotics or even as candidates for an asylum.

These patients come to us with any one or with any number of those vague and intangible symptoms with which we are all familiar. They are usually normal, healthy-looking individuals. Their menstrual history suggests no abnormality. On physical examination we usually find nothing to justify their complaints.

They may complain of exhaustion. More often they express only that one and all-inclusive complaint of nervousness. Inquiry usually reveals the fact that they are irritable. At home they are annoyed by the normal demands made upon them by their families. If employed, they feel that they can no longer bear their responsibilities. An order from a superior precipitates an emotional explosion. To their subordinates they become intolerable.

Insomnia is a common and sometimes the only complaint. Bromides and other sedatives have usually been used without effect. Also, the ill-advised use of barbiturates has probably already proved ineffective. However, after the Estrin balance has been restored, these patients begin to enjoy normal restful sleep.

Many of these patients complain of headache and, perhaps, vertigo. They have probably been told that they have migraine. The otolaryngologist, the oculist, the dentist and perhaps even the allergist have probably already contributed their therapeutic suggestions but the headache persists.

Remembering that a headache of this character is common in castrate women, particularly those who have been deprived of their ovaries in their early twenties, one recalls again the reciprocal relationship between the ovaries and the anterior pituitary, by virtue of which the pituitary excites the ovaries to action when there is a drop in the Estrin reserve and, vice versa, the pituitary relaxes in its efforts, as it were, when there is an abundance of Estrin. Where the ovaries have been removed or where they cease to function, as in the menopause, the hypophysis is particularly active in its hopeless endeavor to again bring about and maintain a normal Estrin balance.

It becomes evident that the headache is due to an over-active pituitary. From a therapeutic standpoint, it is of no particular consequence whether the patient's distress is due to an over abundance of the gonadotropic hormone of the hypophysis, or whether it is due to pressure induced by the engorgement of an over-active gland confined within a small and unyielding sella. The indication is to place the hypophysis at rest, and this can be accomplished by supplying an abundance of Estrin in the form of Amniotin, Theelin, Emennin or Progynon.

Pruritis Vulvae, Kraurosis and Senile Vaginitis are other distressing conditions which we have learned to relieve along more rational lines and more satisfactorily since the discovery of the follicular sex hormone. The trophic relationship between the follicular hormone and the external genitals is well known, and we now know that Pruritis, Kraurosis and Senile Vaginitis are related to a decrease in or loss of this trophic influence. Local applications and sedative medication are usually ineffective but the response to Estrin is generally prompt and satisfactory. Failure to effect results by this substitution treatment points to an inadequate dosage. While some patients will obtain complete relief on 2000 units three times a week, some will require doses of five to ten thousand units.

During the past year two patients with a severe and uncontrollable urticaria have responded excellently to treatment with Estrogenic hormone. In the first of these the relation of the urticaria to a possible estrin deficiency was at first not suspected. The patient was forty years old, a widow and the mother of an eighteen-year-old daughter. One ovary had been removed and the other resected sixteen years ago. Her menstrual history, however, was normal and there had been no change in the amount and duration of the flow.

The urticarial eruption had appeared gradually some weeks before medical aid was sought. The last forty-eight hours it had been constant and almost unbearable. Sedatives and ephedrine by mouth were ineffective and it was necessary to administer adrenalin frequently. The comment of a friend to the effect that, during the past year, the patient had changed in her attitude to her friends and to her family and that she had become irritable and depressed, suggested the possibility that an emotional factor might be retarding the recession of the urticaria.

The response to a single dose of Amniotin was prompt and dramatic. The treatment was administered in the forenoon and, that night, the patient slept without a sedative. The following morning the hives had entirely disappeared. Three days later there was a recurrence of the eruption and again it responded promptly to the same dose of Estrin. She has continued to receive 2000 units three times a week and there has been no recurrence of the hives. She states that she feels better than she has for years, that the treatment, in addition to relieving the urticaria, seems to have lightened all her cares and responsibilities and that life is again worth living.

Another thirty-eight-year-old housewife who had never been pregnant, but whose menstrual history was normal, had an urticarial eruption which had been recurring with varying frequency and intensity for the past eight years. The slightest excitement would precipitate an attack. Tests for an allergic factor had yielded positive reactions for a number of foods but abstinence from these had not altered the course of her ailment. The experience with the previous patient prompted the use of Estrin and, again, the response was prompt and complete. With small doses of Amniotin given at intervals of five to seven days she has had no hives for many months and feels well.

Favorable changes in mental attitudes and emotional stability following the administration of the estrogenic hormone have constituted a particularly interesting phase of our observations during the past year. While this hormone had been used with gratifying results for the relief of melancholia and other psychic manifestations of the evolution period, its use for the relief of a psychosis in a younger woman first suggested itself about a year ago.

A young house-wife, twenty-four years old and the mother of two children, was profoundly depressed. She had ceased to manifest any interest in her children and in her husband, harbored obsessions and had to be kept under observation on account of a suicidal tendency. The condition had first been observed shortly after her marriage seven years before. It was significant that during each of her pregnancies she had appeared to be normal mentally and her husband stated that during these periods she had been a normal, happy and convival mate. Since these remissions had coincided with periods when an abundance of estrin is present, it was decided to supplement her own ovarian output with follicular hormone. She received three 2000-unit doses a week for two months. The response was prompt and complete and she has felt and acted normally for the past ten months although she has received no treatment during that time.

Another young house-wife, twenty-five years old, had, following her last pregnancy during April, 1936, developed what was regarded as an exhaustion psychosis. After two months in a general hospital she was committed to an asylum. Six months later she was taken home unimproved. She would sit all day staring into space and entirely oblivious of her surroundings. She manifested no interest in her children and would not converse with her husband or her attendant. Upon the appearance of a severe acne of the face at which she picked constantly, she was brought to the office of Dr. Donald Wilson, with whom she was seen in consultation. Because an endocrine disturbance was suspected she was placed on two thousand units of Amniotin three times a week. There was a prompt improvement, not only of the skin eruption but also of her mental condition. Three weeks after treatment was commenced she could come to the office alone. When first seen, she presented the appearance of a slovenly, unkept, unresponsive and depressed mental patient. She is now tidy, well-groomed, mentally alert and a cheerful weekly visitor at the office.

Functional gastro-intestinal disorders have also, in some cases, responded well to the administration of Estrin. While there is obviously not the slightest relationship between the female gonads and the gastro-intestinal mechanism, the latter is, nevertheless, at all times subject to autonomic influences emanating from other endocrine glands, notably the pancreas, the adrenals, the thyroid and the posterior pituitary.

Although we do not as yet understand the inter-relationship between the various glands of internal secretion, we do know that, where one gland is affected, either functionally or organically, some, or perhaps all of the other glands will show functional changes. By way of illustration, one may again cite the relationship which causes the hypophysis to elaborate an excessive amount of prolan when the ovary ceases to function or is removed. Or, one could use as an illusstration the diabetic, pancreectomized dog in which the hyperglycemia promptly disappears when the hypophysis is destroyed.

In the gastro-intestinal cases referred to, the patient was in eevry case a high-strung, neurotic individual. These patients presented symptoms which had been variously interpreted as arising from the stomach, duodenum, gallbladder or appendix. In no case did the radiological examination reveal any evidence of an organic lesion. In all cases, however, there was hyper-peristalsis or hyper-spasticity or both. While palliation could be effected with belladonna or sedatives, results were far more gratifying when the estrogenic hormone was used. In the latter case the patient not only obtained relief from her gastro-intestinal symptoms but also she felt better generally, more composed, better adjusted and better able to face the demands of her social and domestic state.

The inference is that the administration of Estrin served to reestablish a more normal endocrine balance, not necessarily because an Estrin deficiency had existed but perhaps because of some direct or indirect inhibiting or accelerating influence upon some other gland which is more intimately related to the gastro-intestinal mechanism.

Relative to the beneficial influence of Estrin upon frigidity, one sees many references in the literature, particularly in the house-organs of some pharmaceutical firms. The administration of folliculin for this complaint has, on the whole, been disappointing. In no case has there been any effect upon patients who had never experienced sexual excitement and a desire for sexual gratification. These women have, regardless of dosage, remained frigid. It must be said however that the dosage may have been inadequate and the treatment may not have been continued long enough.

In cases of impotency, where excitement and desire have at times manifested themselves and where the patient has, however, been unable to obtain complete satisfaction in an orgasm, Estrin has proved of decided value.

Only in women whose conjugal adjustment has previously been normal has there been a constant and definite increase in desire for gratification. An illustration of this is found in the case of a woman who was seen recently on account of nervousness, irritability and hot flashes attending the onset of the menopause. Because of religious scruples and to avoid pregnancy, she had remained continent for the past seven years, and this without any particular difficulty, at least as far as she was concerned. The husband had for many years manifested complete indifference. In fact, he was a confirmed alcoholic and rarely at home. After only a few doses of Amniotin, given for the relief of her nervous and vasomotor symptoms, this patient confessed to such an intense excitement and desire for intercourse that she felt compelled to ask that the treatment be discontinued and some other treatment be substituted.

Beneficial results have also been attributed to the use of Estrin in the treatment of so-called menopausal hypertension. So far there has been no reliable evidence of any favorable influence upon any of the more serious types of hypertension described as Essential or Malignant. In the menopause one does, however, see hypertension of a functional character such as one might see in any other period of life in an emotional and temperamentally unstable patient. It is felt that in this tvpe of patient there is a definite indication for the use of Estrin to relieve the emotional symptoms and, indirectly, the hypertension.

Painful breasts present another problem in which Estrin therapy should be given consideration. It must be remembered that the development and hyperplasia of the duct system of the breasts is directly dependent upon the follicular hormone. The secretory elements receive their growth stimulus from Progestin. The functional activity is under the control of the anterior pituitary, and this, in turn is held in check by the follicular ovarian hormone. If the inhibitory influence of the ovary is inadequate the anterior pituitary lactogenic hormone is free to overstimulate the breasts and the result is an adenosis or mazoplasia. The condition is definitely amenable to treatment with Estrin.

Where, however, the breast symptoms are due to a hyperplasia of the duct system the condition already points to an excess of Estrin, coming possibly from a cystic ovary and here an additional supply of the hormone would, of course, be contra-indicated. Here it would be more logical to attempt to correct the condition by attending to the cystosis of the ovary and trying to effect a more complete maturation of the follicles by the use of the gonadotropic hormone, Antuitrin-S.

Finally, a consideration of the indications for the use of the estrogenic hormone would not be complete were one to fail to mention its uses in obstetrics. Recently this hormone has been used extensively for the relief of the nausea of pregnancy. On the whole, its uses here have been most gratifying. Daily doses of 2000 units have, with few exceptions, proven effective within three or four days. Even in the more severe cases of hyperemesis this hormone compares favorably with the more recently advocated adrenal cortical hormone.

For the control of excessive milk secretion Estrin acts at times as a specific. Recalling that during pregnancy it exercises an inhibitory influence over the lactogenic function of the anterior pituitary, there would seem to be a physiological indication for its use where there is continued milk secretion after weaning, or where it becomes necessary to inhibit secretion after abortions or after premature births.

Lastly, in view of the known fact that Estrin plays an important role in the growth and development of the fetus, there is a very definite indication for its administration to the premature infant. In the abnormally small infant it frequently effects a rapid attainment of normal size and, in the otherwise hopelessly premature fetus, its prompt and consistent administration may result in the saving of the infant's life.

In conclusion, it should be said that while it has apparently been assumed that an estrin deficiency existed where the administration of the hormone produced symptomatic relief, this has, in fact, been only an assumption without quantitative or qualitative evidence to justify it. In many cases we are unable to say whether we are merely supplying a deficiency or whether we are, by adding to the patient's already normal supply of Estrin, inhibiting or exciting some other member of the endocrine family which may be primarily at fault. While we have made definite and positive progress, our exploration of the realm of the endocrines has scarcely begun and our application of what we have observed is still empirical.

STERILITY

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The allotted space will not permit detailed discussion of the many constitutional factors that may influence a sterile mating. Proper investigation of the general health of both parties is quite necessary which must include an assay of the various endocrine activities that influence the reproductive powers of either individual.

There are certain requisites for successful impregnation and nidation, namely:

1. Normal delivery of normal sperm.
2. Favorable endocervical secretion.
3. Patent uterine and tubal canals.
4. Normal oogenesis and ovulation.
5. Proper pregravid endometrium.

The percentage of male responsibility in nonfertile couples is approximately 30%. Normally spermatozoa are deposited directly into the cervical canal or very quickly gain access to this area from the posterior vaginal fornix. Any disturbance in the relation between cervix and seminal lake, such as antiversion or antiflexion of the cervix, would not only interfere with normal deposition into the cervical canal but would increase the difficulty of migration from the posterior vaginal fornix.

The postcoital examination of Huhner furnishes valuable information. Such examination discloses one of three findings:

1. Numerous sperm normally motile.
2. Numerous non-motile sperm indicating either necrospermia in the male or death of the spermatozoa caused by antagonistic secretions in vaginal vault and cervix.
3. Few spermatozoa either motile or dead, indicating primary failure in the husband or loss of the spermatic fluid as the result of anatomical disturbance in vaginal canal.

Proper evaluation of the second or third finding requires examination of the husband by the urologist and further treatment or examination of the wife is contra-indicated until such examination has been completed.

Antagonistic endocervical secretion is responsible for a definite percentage of sterile marriages.

Normally coitus is accompanied by an increased secretion from the endocervical glands, the alkaline mucus neutralizing the vaginal acidity and producing a favorable media for the spermatozoa.

Deficiency of secretory activity would fail to effect proper neutralization and result in rapid death of all spermatozoa not deposited directly in the cervical canal.

"Pin hole os" interferes with the upward progress of the sperm cell, not by the mechanical narrowing of the cervical opening but by the production of an inspissated mucous plug resulting from improper drainage from the cervical canal.

Chronically infected cervices, either traumatised or otherwise, also prevent upward progress by the formation of thick mucous collections through which the spermatozoa cannot pass. The greater percentage of secondary sterility is due to cervical trauma in the first confinement followed by infection of the damaged cervix.

While uterine tumors may produce mechanical block of the endometrial cavity, non-fertility in their presence is usually due to co-existing endometrial disturbances. Tubal obstruction, ammenable to insufflation, may result from mucus lying in the lumen or fine adhesions within the tubal lumen or over the perisalpinx. Pregnancy in such case may follow the Rubin test. Tubal occlusion or complete obstruction, however, is the result of pathology usually at the ampulla or in the intramural portion.

Inflammatory reactions, particularly the postpartum and post-abortal type, are responsible for most of the ampullar closures, while intramural newgrowths, particularly the adenomyomata, account for many of the occlusions occuring in the interstitial portion of the tube.

Tubal insufflation, supplemented when indicated by the introduction of iodized oil, is of marked diagnostic and at times of therapeutic value. Carbon dioxide or air may be introduced under pressure through the intrauterine canula. Normally the tubes are patent at pressures below 100 M. M. of mercury, evidenced by a fluctuation and drop in the pressure which may be confirmed by auscultatory evidence of the air passing through the tubes. Shoulder pain in the upright position from subdiaphragmatic air following tubal insufflation is definite evidence of tubal patency. In tubes not readily patent the pressure may be carried to 150 M. M. with safety and cautiously to 200 with relative safety. The higher pressures carry the possibility of tubal rupture where the occlusion is in the fimbriated area. Insufflation may be performed from above through the abdominal incision by introducing air through the abdominal ostium. This avenue has the advantage of direct observation but would hardly warrant an incision for this purpose alone.

In certain cases repeated release and reapplication of pressure will result in establishing patency not apparant on first attempts. Mucus within the tubes or tubal spasm is the explanation of most of such cases. Antispasmodics may be employed to overcome tubal spasm when it is suspected. We have considered it unnecessary to inject iodized oil in cases where tubal patency has been established by insufflation. In all cases where patency has not been definitely determined, hysterogram has been done with the oil injection. By this procedure not only may the site of obstruction be determined but abnormalities in the endometrial cavity may quite frequently be found. Hypoplasia, uterine anomalies, as well as tumor masses distorting the uterine canal, will be outlined on the x-ray film.

Tubal insufflation should be performed prior to ovluation and should not be preceded by curretage. Three to four days should be allowed to elapse following the cessation of the period to avoid forcing desquamated epithelium through the tubal lumen. The lower genital tract must, of course, be free from infection. Normal oogenisis and ovulation can be determined fairly accurately by endometrial biopsy, showing deficient endometrial growth in the former and a lack of the premenstrual or secretory phase in the latter. The presence of menstrual flow is not definite evidence of normal ovarian activity since anovular menstruation may occur as the result of the sudden fall in the estrin level in the blood. Methods for the quantitative determination of the blood content of both ovarian hormones are available. Normal ovulation may not always be followed by the passage of the ovum into the tubal lumen. Ovarian prolapse and loss of tubal cilia are to be considered as possible causes of this failure.

Since a normal secretory phase in the endometrium is dependent on a vigorous corpus luteum, failure of ovulation or poorly developed corpora lutea will result in a deficient pregravid endometrium. If extrusion and impregnation of the ovum does occur, it cannot undergo nidiation in an unprepared uterine cavity. Biopsy of the endometrium in the late premenstrual phase will furnish the desired information. This can be performed as an office procedure without anaethesia by using a small suction curette.

Successful management of the sterile mating requires removal of all apparent obstacles to fertilization and production of a viable fetus. All general physical diisturbances in both parties must be corrected. Local disturbances in the husband require the attention of the urologist. Anatomical difficulties in the female are to be treated by surgical correction or proper posture during coitus so as to facilitate the deposition of the spermatozoa directly into the cervical canal, or allow them to remain in the vaginal vault for a sufficient time to gain access to the canal. Deviations of the cervix from its normal position in the posterior vaginal fornix should be remedied by the insertion of a pessary to correct uterine retroversion or surgical lengthening of the anterior vaginal wall for the antiflexed cervix. Deficient cervical gland activity may be remedied by an alkaline douche taken three or four hours before coitus, thereby neutralizing the acidity of the vaginal vault and producing more favorable media for the spermatozoa in the seminal lake and lower cervical canal. Chronic cervical infections should be treated by tamponade, thermotherapy, cautery, surgery or conization, as the pathology demands. The "pin hole os" requires dilation to allow free drainage from the canal. Pregnancy at times follows this simple procedure.

Uterine tumors at times lend themselves to enucleation. Those situated about the intramural portion of the tube are most often adenomyomas and do not separate easily from the surrounding tissue. Tubal obstruction may at times be relieved during the course of tubal insufflation. One such case, after several trials at the same sitting, showed air passing through the tubes at 140 M. M. of pressure. She had one period following the insufflation and became pregnant in the next intermenstruum. Tubal occlusion, if at the intramural portion, has an unfavorable outlook, since tumor masses in this area do not enucleate easily and tubal implantation for inflammatory closure is not, as a rule, attended by subsequent pregnancy. Tubal occlusion at the fimbria gives a somewhat better prognosis. Salpingostomy in this area gives about 10% of subsequent pregnancies with about 4% of viable offspring.

Endocrine therapy for deficient oogenesis is still in its infancy. The administration of a large dose of estrogenic hormone just before the time of ovulation is advocated by some to promote extrusion of the ovum. The administration of Pituitary hormone "Prolan B" in adequate dosage during the premenstruum favors a stimulation of the corpus luteum and proper preparation of the pregravid endometrium so necessary to the secure implantation of the fertilized ovum.

CONCLUSIONS

1. Management of the sterile mating requires careful examination of both parties.

2. The Huhner test is indicated in all cases and is a source of valuable information when combined with separate examination of the husband.

3. Local anatomical disturbance must be corrected.

4. Antagonistic cervical secretion is a common cause of sterility, especially the so-called "one child sterility."

5. Uterine block occurs infrequently.

6. Tubal block may be incomplete or complete and end results depend, to a great extent, on the site of the obstruction.

7. Proper development of the pregravid endometrium is necessary and may be assisted by the administration of "Prolan B."

8. Simultaneous correction of all evident causes is necessary to secure results.

IDENTIFICATION OF GONOCOCCI IN COMPLICATIONS OF GONORRHEA

R. J. Reitzel and Cordula Kohl, San Francisco (*Journal A. M. A.*, April 2, 1938), indicate the necessity of making certain of the diagnosis when complications of gonococcic infections are involved and show that bacteriologic procedures of proved value, which are relatively rapid and simple in performance, are now available for more widespread clinical use. During the past five years they recovered the gonococcus from blood, synovial fluid, pus from tendon sheaths, material from cutaneous lesions, peritoneal fluid, fliud from an abdominal cyst, material from ovarian and Bartholin glands and material from labial, periurethral and perianal abscesses. They have in many instances cultured the gonococcus from cervical, urethral or prostatic discharges when examination of smears gave negative or inconclusive results. In fourteen of twenty-five cases of proved gonorrheal arthritis the history did not indicate previous gonococcic infection, and in these cases either the routine smear was reported to be negative or no urethral or cervical discharge was obtainable. The diagnoses were made by recovering the organisms from blood (in seven cases), synovial fluid (in sixteen cases) or both (in two cases).

GONORRHEA COMPLICATING PREGNANCY

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That gonorrhea may be, and usually is, a serious complication of pregnancy is almost a self-evident statement. One dread result alone—ophthalmia neonatorum, formerly the cause of thirty per cent of blindness in children—is enough to support such an assertion. We can easily contemplate other possibilities, that may occur in the pregnant and puerperal woman—salpingitis, peritonitis, pelvic abscess, endocarditis, arthritis, one-child sterility, ectopic pregnancy and a newly described disease entity, gonorrheal perihepatitis, with the possibility of a mistaken diagnosis of gallbladder disease. All these extensions or sequelae may be due to a disease originally local and the cause of much invalidism, mental anguish, or even death.

Gonorrhea, as a complication during pregnancy, may occur in three ways. It may antedate conception, (the most common), be acquired at the impregnating coitus, or after conception.

The question of diagnosis, especially in the chronic cases, that come in the first group, is one upon which considerable time may be profitably spent in discussion.

From the clinical standpoint, the signs and symptoms of gonorrhea, acute and chronic, are as in the non-gravid woman, with the possible exception of aggravation of some or all of the symptoms, due to the congestion and succulence of the tissues affected. This increase in intensity may be accounted for thus by the abundant stimulus for the rapid growth of the gonococcus.

One must not neglect to look for discharge from the urethral glands, the gonorrheal macules of Sanger, and palpation of Bartholine's glands. Urinary symptoms such as frequency and burning or smarting may be of little value, other than to suggest further investigation. Stripping of the urethra through the anterior vaginal wall or direct inspection of the urethral glands (Skene's) will usually show some purulent discharge and demonstrate thereby one of the foci, where the gonococcus may be found. Single-handed exposure of Skene's glands is most easily done with some variety of skenoscope. As for the vulvo-vaginal glands (Bartholin), it must be remembered that the normal gland is scarcely discernible, if at all, by palpation, so that when even a small firm kernel is felt in the lower third of one or both labia majora, this finding should arouse more than a suspicion of infection in this area. If, in addition, one can express a small amount of discharge from the duct or can find a small pinhead sized reddened area in that location, it is further evidence that the patient may have gonorrhea, since other forms of inflammation in this gland are rare. Smears may be made from the discharge from both sources for further examination. The cervix is the last of the three foci of gonococcus infection in the female, and in chronic cases, equally troublesome as a source of demonstrable gonococci. Squeezing the cervix between the ends of the blades of the speculum, or discharge provoked by the application of 10% silver nitrate are aids in bringing the diplococcus of Neisser from the depths of the glands—sometimes. Often the search is vain. Other laboratory aids, complement fixation and cultural methods may be used when available. Cultural methods are now developed to a point where one may place more confidence in them than in the usual smear. Most often, the man on his own must depend upon three or more successive smears, and from a clinical standpoint the ordinary methylene blue smear is satisfactory.

Summing up the clinical signs and symptoms, in a florid case, we may find several characteristics:

1. Rapidly developing and sometimes very severe symptoms.
2. Involvement of urethral or vulvo-vaginal glands.
3. Recent and possibly suspicious intercourse.
4. Presence of gonococci, clinching the diagnosis.

The diagnosis of the subacute case may not be quite so easy, but will not usually offer difficulties such as is found in the chronic case.

As for complications during and after pregnancy, the following may be enumerated:

The Baby—direct contact:
Gonorrheal ophthalmia—30% of blindness in children.
Vulvovaginitis.
The Mother—upward spread:
Endometritis or deciduitis—abortion (not common).
Acute salpingitis—tubes often found completely occluded at fimbriated extremities.
Peritonitis:
Pelvic.
General.
Perihepatitis.
Sepsis:
Pure gonococcic sepsis—uncommon, mortality low.
Mixed—strep., staphy., B. Coli, etc.
Arthritis.

As for treatment, a few principles can be laid down. First, it is well known, that, in the uncomplicated case, the gonococcus is harbored in three foci in the female genital tract—Skene's glands, Bartholin's glands and the endocervix, all glands lined by columnar epithelium. The labial surface, the vaginal mucosa and the endometrium are barren soil as far as the gonococcus is concerned and treatment of these areas, other than to allay the effects of irritating discharge, is unavailing. Other equally useless methods are the injection of Skene's and Bartholin's glands with antiseptics. The urethral glands should be exposed and destroyed with phenol, coagulation or actual cautery. The handling of the vulvo-vaginal glands is something else again. Being compound tubular glands, instead of simple as are Skene's, the situation is not so easy to handle. As was said before, injection with antiseptics is ineffectual, since the solution will in no case reach all the tubules, and even if it did, it would still be to no purpose, as the organisms we wish to destroy still beyond the reach of any antiseptic. If the glands are enlarged and easily palpable, the surest method is enucleation. This is something more than a minor operation, due to the possibilities of profuse hemorrhage. The other method is coagulation. Having had no experience with this procedure, I can only say that the results would be certain, if the coagulating current has sufficient strength and duration, but will leave two partially buried areas of necrosis, which in turn would still present another problem in treatment. If an abscess is present, free incision and packing is one method of treatment—the other, incision with the cutting current and fulguration of the entire lining membrane of the abscess cavity, a very satisfactory method of treatment.

The cervical focus remains the last and probably the most difficult problem of all to treat during pregnancy. The simplest procedure for destroying the gland-bearing areas, conization, is out of the question during the pregnancy, because of the formidable reaction that will probably follow. Again, the use of antiseptics is useless. Cauterization, if thoroughly done, is also dangerous. This leaves us only the use of silver compounds in a series of conservative treatments as soon as possible after the discovery of the gonococcic infection. Having had two certain and one possible abortion after cautery treatments of the cervix during pregnancy, I cannot recommend anything more radical. When one considers that many authorities are still skeptical as to the curability of gonorrhea, even outside of pregnancy, conservatism of the type outlined is justifiable.

Finally, with a known case of gonorrhea, one must not forget the proper treatment of the baby's eyes immediately after labor and the possibility of vulvovaginitis in girl babies born of infected mothers.

"FRACTURES AND DISLOCATIONS OF THE CLAVICLE"*

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ANATOMICAL CONSIDERATIONS

The clavicle is a slender, subcutaneous double curved bone which acts as a prop to hold the point of the shoulder back and out from the trunk. It is a key bone and the only osseous connection between the upper extremity and the trunk.

At the juncture of the two curvatures of the bone; that is, near the external point of the middle third, the bone is thinnest and less protected than any other portion of the shaft and consequently fractures occur most frequently at this site.

Very important are the structures beneath the middle third of the clavicle; namely, the three cords of the brachial plexus and the subclavian artery. Severe injuries, especially by direct blow to the clavicle, are apt to produce serious damage to these important structures. The medial cord of the brachial plexus, which contains the fibers making up the ulnar nerve, crosses the first rib directly under the middle third of the clavicle, and disturbances over the distribution of this nerve are the most frequent soft tissue injuries associated with this fracture. The space between the clavicle and first rib has been named by Burkheiser as the costo-clavicular space. He finds that this space is not as large in the living subject as in the cadaver. This is explained nicely by the fact that the vessels in the living are distended and the first rib is elevated by the scalenus anticus muscle.

The sterno-clavicular joint is not particularly strong, the proximal end of the clavicle being held in place by the costo-clavicular ligament, which binds the inner end of the clavicle to the first rib. In spite of the apparent insecurity of this articulation, dislocation here is not common.

The acromio-clavicular joint is also quite subcutaneous, the distal end of the clavicle being held down in place in the depression of the acromion by the coroco-clavicular ligaments which are divided into the conoid and trapezoid. These extend from the corocoid process of the scapula, upward and attach themselves to the inferior surface of the distal third of the clavicle. This joint is more prone to injury than its mate, the sterno-clavicular articulation.

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*Lecture presented at the meeting of the Omaha-Midwest Clinical Society, Oct. 21, 1937.

FRACTURES OF THE CLAVICLE

Fractures of the clavicle occur in approximately 5 to 10% of all fractures. It is particularly common in children, here being the greenstick type with or without angulation and quite often unrecognized. The usual mechanism of injury is a fall which tends to push the shoulder upward and inward against the chest. A fall on the outstretched hand is a very common mechanism and not infrequently there may be an associated fracture of the neck of the scapula, the upper ribs, neck of humerus, elbow injuries, or Colles' fracture at the wrist. Direct blows more frequently produce the comminuted, markedly displaced type of fracture. In spite of the fact that the bone is subcutaneous, a compound fracture is rare, unless the injury is a gunshot wound or some severe penetrating type of injury.

The displacement of the fragments, if any, is dependent upon the fracturing force and muscle pull. In the greenstick variety seen in children, upward angulation is quite common. In the complete type of fracture, the outer fragment is displaced downward, forward and inward, chiefly by the weight of the shoulder girdle and the pull of the pectoral muscles and the latissimus dorsi. The medial fragment is usually pulled up to variable degree by the sterno-mastoid muscle. In complete fractures, there is practically always over-riding of the fragments.

The diagnosis of fracture of the clavicle should not be difficult. In the greenstick type without displacement, the important clinical subjective sign of localized line of tenderness is always present. In the complete fractures, by gentle palpation, the exact site of the fracture and the displacement may be determined.

X-ray examination should be made of the complete fracture for various reasons. In the first place, it gives definite information regarding the displacement of the fragments. Secondly, it rules out any associated fractures about the shoulder, and thirdly it is a very desirable record for future reference. In the greenstick or non-displaced fractures, x-ray is not absolutely essential, but that is dependent upon the circumstances of the case.

Of particular importance in examination for the purpose of diagnosis is ruling out an associated fracture in some distant portion of the extremity. It is always desirable to determine motor power and sensation in the fingers, as well as to check the terminal circulation. This is of particular importance in the severe crushing injuries about the shoulder. As stated previously, disturbances over the ulnar distribution are the most frequent and may be delayed due to increased malposition of the fragments or excessive callus formation during the process of repair.

The treatment of fractures of the clavicle resolves itself, as in all fractures, into procedures depending upon the age of the patient, the type of fracture, whether or not it is displaced, and in this particular lesion, the sex of the patient. This latter is of definite importance, in that the cosmetic end result in women is obviously more important than in the male group, so that here more accurate anatomic reduction is to be desired.

In children, as well as in adults, the latter without displacement, the figure of eight dressing is the most desirable type. This has quite well replaced the various modifications of Valpeau dressings. However, each method has its followers; and as pointed out by Lester in 1929, at that time there were more than 200 different methods described and recommended for the treatment of this commonly considered minor injury. Fixation with the simple figure of eight dressing in the undisplaced type of fracture should be carried out for a period of three to four weeks. The arm should also be carried in a sling for at least the first two weeks and again for an additional week following the removal of the fixation dressing. In the displaced fractures, reduction of the displacement is relatively easy by forcing the shoulder up, outward and backward, but the maintenance of this reduction is quite difficult. In the moderately displaced fractures, addition of the clavicular cross to the figure of eight bandage is desirable. Where considerable displacement is present and reduction cannot be maintained, then treatment by recumbency should be carried out. It is a question whether this is not the ideal arrangement from the beginning and is very definitely indicated in women, as with recumbency, particularly on a Bradford frame with a pad between the shoulders, the majority of these displaced fractures return to proper position. A certain percentage will require lateral traction on the upper extremity similar to the type used in fractures of the surgical neck of the humerus. Three years ago when we had the opportunity of treating a fracture of the surgical neck of the humerus associated with a displaced fracture of the shaft of the clavicle, very fine reduction was obtained of the latter fracture when the humeral injury was treated by extension and abduction with external rotation and suspension of the arm in a Thomas arm splint. Key and Conwell feel that the greater percentage of clavicular fractures should be treated by recumbency with lateral traction, as we have already described. The period of recumbency need not be over ten days or two weeks, following which ambulatory fixation in a clavicular cross with a figure of eight bandage or a shoulder spica cast with the affected arm in abduction may be applied. The latter method may be used for the primary dressing if satisfactory position can be maintained.

With increasing experience, and especially opportunity of seeing more end-results by conservative treatment in the comminuted displaced fractures of the clavicle, we are inclined to consider open reduction necessary in more instances than formerly. The open reduction has the same disadvantages as that found in operative treatment of fractures elsewhere, although the good clinical cosmetic result obtained outweighs the risks. Fortunately, non-union of the clavicle does not occur frequently, but where there is definite defect between the main fragments, this complication may occur. Burkheiser has reported nine cases of fracture of the clavicle with non-union and one case with mal-union in which there was associated disturbances of the ulnar nerve, and he is quite definite in his statement that present day treatment of these fractures is inadequate.

In the operative treatment of these fractures, we have in each instance attempted to limit internal fixation to either absorbable material or the oblique fine steel pin, which is easiily lifted out as it presents itself in the line of incision. In the oblique comminuted types, we have used No. 2 chromic catgut, lashed about the fragments very much as a bamboo fishing rod is wrapped and in some instances, the use of fine twisted phospho-bronze wire has been considered necessary. In the transverse displaced type, the oblique steel pin is the most desirable type of internal fixation.

Whatever the type of internal fixation used, adequate external splinting post-operatively is very important. Continued recumbency in bed for a week or ten days in a shoulder spica plaster including the affected upper extremity, is the desirable arrangement. With the patient anesthetized, it is often more convenient immediately following the operation to apply molded anterior and posterior splints, one extending across the upper sternum from the opposite shoulder and one posteriorly across the shoulders, and extending onto the arm and to the tips of the fingers. The extremity should be in 90 degrees abduction if this does not tend to distract the fragments. At the end of one week, if the fixation pin is used, this may be lifted out without difficulty. Immobilization with plaster should be carried out for approximately four weeks, as the operative procedure here is no different than elsewhere, in that union is somewhat delayed with disturbance in the circulation in the area surrounding the fracture.

In our group of six patients who have required open reduction during the past two years, the most troublesome type in which satisfactory reduction could not be obtained has been the fracture of the proximal third of the shaft of the clavicle and the comminuted, markedly displaced type, usually due to direct blow resulting from automobile accidents.

The prognosis in fractures of the clavicle from the standpoint of function is practically always good, unless non-union or marked mal-union occurs. The cosmetic result, however, often leaves much to be desired. This accounts for the recent more careful handling of this fracture, first by recumbency and lateral traction, especially in women, as well as the more frequent open reduction in those in which there is marked displaced and rotated comminuted fragments.

ACROMIO-CLAVICULAR DISLOCATIONS

Next in importance and frequency in lesions of the clavicle to that of fracture are dislocations of the acromio-clavicular articulation.

The usual mechanism of injury is a blow or fall on the point of the shoulder, which forces the acromion process downward, lacerating, in the milder cases, the articular capsule. The complete dislocations producing tear of the corococlavicular ligaments have the characteristic prominent distal end of clavicle, which by manipulation may be easily brought back into position, but immediately springs up into the displaced position.

The treatment of this condition in the acute stage is conservative and it is necessary to apply a very snug dressing of a modified Valpeau type. A loop of heavy bandage is passed from the point of elbow with the forearm at right angles, up over the distal end of the clavicle at the point of the shoulder, lifting the arm upward and depressing the clavicle at the same time, so as to get the displaced bones into position. This bandage must be kept very snug at all times until the ligaments have had an opportunity to heal. A special simple retaining harness is applied at the end of approximately three weeks and should be worn for at least an additional five weeks.

In spite of adequate early treatment, a certain number of these acromio-clavicular dislocations do not retain the position satisfactorily, and operative procedures are indicated. The most satisfactory operative repair is the one in which a fascia-lata strip is passed around the base of the corocoid process of the scapula, and up over the shaft of the clavicle, thus reconstructing the lacerated coroco-clavicular ligaments. In addition, repair at the acromio-clavicular joint itself should be made with the use of heavy chromic cat-gut or kangaroo tendon. It is essential that fixation following this procedure be very adequate and the ideal type of immobilization is a shoulder spica plaster cast with the arm in abduction. This rigid fixation should be continued for at least six weeks, followed by a Valpeau or figure of eight dressing.

In the unreduced chronic dislocations of the acromio-clavicular joint, functional disability as a rule is not great. Individuals doing light duty are able to continue with little difficulty. It does, however, produce some drooping of the affected shoulder and from the cosmetic standpoint, leaves much to be desired. In individuals doing heavy type of work, the plastic repair as described should be carried out.

STERNO-CLAVICULAR DISLOCATIONS

Injuries to the sterno-clavicular joint with dislocations, occur usually as a result of a leverage action, forcing the clavicle upward and anterior. In spite of the fact that this is a rather unstable articulation, dislocations here are relatively infrequent.

The diagnosis can be made easily by clinical examination, both by inspection and palpation, as the subcutaneous sternal end of the clavicle becomes prominent and mobile.

Reduction of this dislocation is relatively easy by forcing the shoulder up and backward, with the patient in the suppine position and at the same time manipulating the sternal end of the clavicle into position. Reduction is usually easy in the fresh cases, but due to the instability in the joint, dislocation tends to recur. If with an adequate figure of eight dressing and a compression strapping directly over the sternal end of the clavicle, reduction is not maintained, again the recumbent treatment with lateral traction on the upper extremity and pressure with a sand bag over the end of the clavicle should be instituted.

Open reduction in this dislocation is quite often necessary, as the majority of these lesions are seen at a variable period following injury. Exposure of the joint through a short transverse incision, deepening the bed for the clavicle in the sternum, and then lashing the former down to the first rib with either chromic cat-gut or a strip of fascia-lata, followed by reefing of the capsule, usually gives a good functional result.

SUMMARY

It is our impression that fractures of the clavicle as well as the more unusual dislocations of its two articulations have not been given adequate attention; consequently, the cosmetic result, if not the functional outcome, has been disappointing in many instances. It is our suggestion that more of these fractures be treated by recumbency, especially during the first week, and in the severely comminuted types with displacement of fragments, that open reduction be used more frequently. The procedure of choice in any case is dependent to a considerable degree upon the individual surgeon. With the subcutaneous position of the clavicle, minimal amount of internal fixation should be used and especially Lane plates should be discouraged, as they are very prone to produce infection with the amount of unabsorbable foreign material necessary. If the surgeon is given opportunity to treat these injuries of the clavicle in an adequate way, the functional as well as the cosmetic result should be very satisfactory in the majority of cases.

"UNDER THE INFLUENCE"

MEDICO-LEGAL ASPECTS

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The court instructs the jury that a person is drunk in a legal sense, "when he is so far under the influence of intoxicating liquor that his passions are visibly excited or his judgment impaired."

The symptoms of this intoxication vary with the concentration of alcohol, not in the stomach, but in the blood stream. Alcohol is absorbed, as such; there is no breaking down of chemical formula like in other digestion of food materials. It remains as alcohol until it is finally oxidized and excreted. This latter burning up by the body tissues takes place at a fairly uniform rate regardless of the concentration in body.

Its chief action is that of a depressant. The drinker escapes from his worries and anxieties, from restraint and social conventions. He is less keenly aware of his environment and his normal judgment is less acute. This is due chiefly to depression of the higher centers in the brain, motor areas, breathing center, etc. The acidosis that develops after a large ingestion accounts for tomorrow's hangover.

Now, with a highway safety committee in every town, both great and small in these United States, doing their utmost to lessen the rapidly increasing highway fatality; with the law enforcement and prosecuting section of these municipalities needing help, medical men should be more familiar with newer procedures and get behind the program to help stamp out this man-created epidemic.

Drunks and drunken drivers have been with us from the beginning of time. History is full of references to generals, both great and small, who filled up on the cup and drove their fine chariots at great and reckless speeds through the multitudes. However, it is only in recent years that progress has developed the hundred horsepower cars with foot-feeds that can be pushed to the floorboards not only by the careless driver, but those who are in all stages of alcoholic saturation, whose normal reflexes, time reaction, and muscular abilities have been slowed down to the extent that they are not only unsafe on the highways, but are dangerous to others as well.

Doctors are peace officers even if they are not so listed. No court in the country will convict on drunken driving charges without the testimony of some skilled physician. It takes his training and skilled observation to establish the so-called state of intoxication. He may be called upon at any time, usually at night, to pass judgment on some one, friend or enemy, and he must know the symptoms alcohol produces and those that are produced by various other diseases and conditions.

Every physician thinks he knows a drunk when he sees him and is sure when that individual is dangerous to be on the highway. But put this same doctor on the witness stand confronted by a smart lawyer with equally smart medical assistance and see how soon this evidence of his is so badly torn up and distorted that it is of no earthly value to either court or jury.

Because so much work has been done by lay organizations to put a stop to this terrible highway killing with automobiles, medical men should acquaint themselves with the symptoms of both alcohol intoxication and the diseases that can be confused with it. It is the purpose of this paper to review the symptoms and the newer thoughts on drunkenness, especially the chemical check that is now available. It is undisputable in court.

Alcohol intoxication is, for convenience, divided into five stages, each so dove-tailed into the other that the line of division is practically imperceptible. However, when the clinical division is noted and the laboratory report returned, these five divisions are readily demonstrated.

Above all things don't be confused by the amount taken or the type of beverage enjoyed. The number of "beers" or high-powered cocktails taken mean nothing. It is the amount of alcohol absorption that decides the degree of intoxication. It is the concentration of alcohol in the blood stream that produces the symptoms. The normal alcoholic content of the blood is 0.004%.

Stage One: Weakness of self control and a blunting of the power of self criticism. Marked lowering of the intelligence and faulty memory. Inability to follow directions in detail. Most instances not visibly intoxicated.

Stage Two: Clumsiness: Impairment of vision and hearing, skilled movements and sense of perception are decreased; mental dullness and emotional instability are the chief symptoms of this stage.

Stage Three: Judgment and self control virtually suspended. Locomotion unsteady, difficult, and the individual is now nerveless. If not disturbed he sinks into heavy sleep.

Stage Four: Coma from which he can be aroused only with the greatest difficulty and then responds only in a limited manner.

Stage Five: Death.

The above classification is the common text book description.

Dr. Herman Gunn of Ashland, Ohio, elaborated on the first three stages and brings out some details that are well worth recording and bring this old classification up to date.

Stage One: Less than 1% alcohol in blood-urine.

(a) Higher centers of brain first affected.

(b) Blunting of finer grades of judgment, reflection, observation and attention.

(c) Slight changes in moods and disposition.

(d) Increase in confidence of one's own physical and mental powers.

(e) Feeling of good fellowship.

(f) Decrease in reflex irritability; lessened sensory sensibility; slowing of reaction time; less accurate and adequate muscular and mental operations. The whole picture is one of decreased human efficiency.

Stage Two: Less than 2% alcohol in blood-urine. All the above become more marked and conspicuous.

(a) Lowering of self control.

(b) Weakness of will power.

(c) Speech may be voluble and rapid; somewhat disconnected and confused.

(d) Muscular movements active and often unrestrained.

(e) Loss of power to control moods which may be exulted, gay, sentimental, bellicose, boisterous, quiet or depressed.

(f) Marked emotional instability, sudden shifts from hilarious to weeping and from friendliness to abusive antipathy.

(g) Pupils dilated.

(h) Respiration and heart rate accelerated.

(i) Skin flushed and especially hands and face.

(j) Impaired muscular incoordination always present.

Stage Three: Less than 3% alcohol in blood-urine. Here symptoms of stimulation lessened and incoordination more prominent.

(a) Flight of ideas.

(b) Pressure of activities.

(c) Loss of all sense of propriety.

(d) Loss of power of voluntary attention.

(e) Degradation of moral tone.

(f) Speech slurred and thickened.

(g) Sensory disturbances (double vision; ringing ears; sense of pain blunted; dullness of hearing noted in loudness of talk).

(h) Nausea and vomiting.

(i) Motions exaggerated and tendency to overdo everything attempted.

(j) Gait, staggery and uncontrolled, swaying in standing and even falling when eyes closed. Cannot walk straight line or place finger unhesitatingly on desired spot.

After several years work by police, chemists and physicians, a rule of thumb standard has been worked out which states that no person is competent to drive an automobile when his blood or urine shows 0.15% alcohol or more, which by the way is considered by many investigators as being still too high. Perhaps it will have to be reduced to one-tenth per cent. Let us digress here for a moment to explain the controversy that is raised by some attorneys that the use of this chemical finding is violating the man's rights before the law; that he is being made to testify against himself and against his will. This argument is inconsistent as all persons arrested must submit to fingerprinting, the most damaging evidence ever devised by man, and this is accepted and allowed by all courts. This same arrested drunk is made to walk a crack or chalk line; to use the finger-nose test; the tremors are noted, the conditions of pupils and a thousand and one other stunts that have been suggested are used and are brought into court by the examining physician and used against the accused. Why not the simple blood-urine examinations? No physical examination is ever complete without this procedure.

The Arizona supreme court has ruled this past summer that this is admissible and part of a regular legal procedure.

Many physicians will object to the taking of a blood specimen, and likewise many patients are confused and bellicose and make the procedure quite difficult. However, some fairly large per cent want it done, "to prove they are not intoxicated." Just grandstand play. This is eliminated by the known fact that the urine contains to all intents and purposes exactly the same concentration of alcohol as the blood. Here any peace officer can collect a sample of urine, seal and deliver it to a laboratory. The addition of a small quantity of benzoic acid will preserve the specimen up to thirty days.

The National Safety Council has worked out a simple card that is so complete that it virtually makes the diagnosis and puts the patient in proper classification. Everything that any physician wants to know to establish diagnosis is noted and this card is admitted as his personal notes in all courts. No attorney, no matter how well developed his mind or how sharp his wit, could confuse a doctor with this card before him.

The chemical testing of alcohol in body fluids is as yet much too complicated for the average doctor, but the technique has been so simplified that today any laboratory can give a complete report in a very few hours at a very small cost.

Recent available data have brought out the thought that the most serious contributing cause of highway accidents is the pedestrian "under the influence" and surprising as it may seem, this is especially so at night.

There are fully fifty conditions that produce one or more of the symptoms usually attributed to alcohol and of course they must be eliminated in the physical examination. There is NO other condition that produces alcohol in the blood or urine except drinking it, so in the chemical testing of these fluids we have one procedure that is perfect and undisputable.

The laboratories report percentage of alcohol present "by weight" as a rule. To convert "by volume," simply add 20% to the reported figure. Percentage by volume is very inaccurate, depending upon so many outside factors, such as density of urine, temperature, etc. Knowing the man's weight it is easy to compute the amount in his blood stream, but keep in mind that this has nothing whatsoever to do with the amount taken into the stomach. It is the absorbed alcohol that really makes the condition of "Under the Influence."

The following are the diagnostic pitfalls as outlined by the Committee on Tests for Intoxication, of the National Safety Council.

Flushed Face: Emotion, shyness, chlorosis, indigestion, feeble circulation, general disability and epilepsy.

Dilated Pupils: Tabes dorsalis, aneurysm, atropine and belladona, catalepsy, fright, emotion, toxic goitre, and acute mania.

Contracted Pupils: Cerebral tumor, cervical sym. lesions, spinal chord lesions, encephalitis, hypermetropia, intra craneal abscess, iritis, tabes dorsalis, uremia, thyroid gland enlargement.

Ataxy: Diphtheria, diseases of spinal chord, tabes dorsalis, new growths, Friederick's ataxy, disseminated sclerosis, syringomyelia, lesions of cerebrum, lesions of cerebellum, chorea.

Speech: a, Slurred, disseminated sclerosis, Friederick's disease; b, Scanning, cerebellar abscess and tumors, and sclerosis; c, Defective, cerebral emboli, diplegia, sclerosis, chorea; d, Loss of, Pneumonia, typhoid, migraine, hemiphlegia, cerebral syphilis.

Local loss of Power: Pseudo paralysis, congenital dislocation of hips, infantile paralysis, old hemi or mono or para plegias.

Incoordination: Tabes dorsalis, ataxic paraplegia, sclerosis, hereditary ataxy, cerebellar disease, and paralysis of eye muscles.

Coma (late): Lesions of brain or meningitis, supperative meningitis, tubercula meningitis, epidemic cerebrospinal meningitis, acute encephalitis, cerebral tumor or abscess, post epileptic state, syphilis of brain, uremia diebetes, Addison and Reynaud's diseases, myxedema.

Coma (early): Result of head injuries, concussion, depressed fractures, and fracture of base, vascular lesions of brain, emboli, hemorrhage, and acute effect of drugs as opium, veronal, trional, barbital group, carbon monoxide, carbolic, anesthetics. Chronic lead poisoning, heat stroke, excessive cold, excessive hemorrhage from any cause, Stokes Adams disease, and above all, hysterical trance.

HEADACHE: SYMPTOMATIC AND UNDETERMINED

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Headache is seemingly a trite subject. Yet it is a symptom that is common and frequently difficult to evaluate. It is variable in degree from slight inconvenience to total disability and may be due to one or more of many causes.

For those of us who practice ophthalmology and rhinology headache is frequently the major complaint of the patient. In the absence of obvious inflammatory symptoms we think first of errors of refraction. Perhaps the manifest error is slight. If a considerable increase is noted with a mydriatic we feel more confident that glasses are indicated. If the refraction error is slight, glasses may still be prescribed because of other concomitant ocular symptoms or the vocational or avocational habits of the individual. The amount of refraction error is not the sole determining factor. Some individuals seem to be more sensitive to accommodation fatigue than others and feel better wearing glasses all of the time for comparatively slight errors.

Ocular headaches are most frequently localized in the temporal region, unilateral or bilateral, but may be occipital or quite diffuse. The degree of severity may be such at times as to cause one to suspect he might find a choked disc. Much refraction is done without the use of a mydriatic, but my personal opinion is that a mydriatic is essential to good refraction in most cases. The eyes lend themselves readily to examination by methods of precision for their anatomical structure and functional activities, yet one is apt to go astray if he prescribes glasses with too great precision. Due consideration must be given each individual case. There is a factor which can not be standardized but is an art based on experience.

Headaches of nasal origin are much less frequent than ocular headaches. However, the sinus question has for some time had a quite firm grip on the imagination of the public and has resulted in much self-diagnosis of sinus headache. Perhaps we too have erred in our enthusiasm in searching for a focus of infection, and in attaching undue importance to structural anomalies interfering with ventilation and anatomical drainage. In the absence of obvious indications for surgery the present trend appears to be toward conservatism on the part of the doctor and reluctance on the part of the patient to accept doubtful operative procedures. X-ray interpretation should be appraised with care and in accordance with objective findings and clinical history. Also the sinuses may be wrongly suspected because of referred pain through the ganglia and branches of the fifth nerve.

When we have to our satisfaction excluded physical causes for headache, there remains a considerable percentage of cases which we must place in the group of symptoms of undetermined origin. In all departments of medicine this is still a considerable group. Now and then we take something out of this group and again put something back. Of this there is ample evidence in current medical literature and individual clinical experience. However, the group of symptoms of undetermined origin is steadily diminishing. Research in allergy, endocrinology, vitamins and hormones is doing much to establish the etiology of headaches of hitherto undetermined origin.

We like to think in terms of precision in establishing our etiology, diagnosis and treatment of symptoms, but clinically we often encounter obstacles that cause us to suspect other than physical etiology. The problem becomes more personal. We have to consider the individual from the viewpoint of psychology which, in a technical sense, is the province of the psychiatrist. Modern psychology and psychiatry have provoked much thought for all of us in the direction of scientific interest in mental processes, their symptomatic effect and treatment. Seemingly, through the scientific approach by analysis of psychological data in many situations of life, there is evolving a classification of reactions that looks promising in the field of clinical medicine. Perhaps the psychologist and the psychiatrist will soon supply us with simplified working formulae that will enable us to evaluate scientifically the psychogenic factors in many cases of headache without being too personal or too general, a sort of first aid technique. To say that many headaches are nervous headaches is not specific enough to be of much help to the patient or of particular interest to the doctor. Many people are aware of situations of mental agitation that induce headaches for which they do not consult the doctor. Many others have headaches and are not aware of the mental situation responsible and consult us for physical causes. The ophthalmologists see a goodly number of them. Some are aware of their cares and worries and want only to know if the eyes and sinuses are contributing factors. Others do not suspect a psychogenic factor. Perhaps we do, but most of us, I believe, resort to generalities in our opinions.

Much of the current interest in psychology is not limited to medicine but is shared by educators, sociologists, and the general public. The daily press, magazines, and the current best sellers reflect this interest in its general application to human relations and individual health and welfare.

It would be interesting to know the results of a psychiatric study of a large series of headaches of undetermined origin. When one considers the vast number of headaches that are obviously psychogenic it seems probable that many others are. Migraine has gone through this test, apparently without results, and remains for the present a clinical entity.

I disclaim any qualifications to speak technically on matters pertaining to psychiatry. My knowledge is too superficial and diffuse for me to do so. I wish only to register a favorable reaction to the possibilities indicated by the trend of investigation in psychology and psychiatry.

There is a considerable heritage from the past in the history of medicine and the references of literature, philosophy and religion that is pertinent to the present. Galen commented on the ambiguous symptomatology in many case reports of his time that two important signs, fear and sadness, were overlooked and that ambiguous symptomatology was not found in those of "generous spirit and courageous temper."

"Hippocrates relates he found Democritus with a book on his knee. The subject of his book was melancholy and madness, about him lay carcasses of many beasts newly cut up and anatomized to find the seat of this black bile, or melancholy, whence it proceeds and how it was engendered in men's bodies, to the intent he might better cure it in himself and teach others how to prevent and avoid it."

While the pattern of his skill is obsolete, the moral and ethical philosophy of Hippocrates still functions in the Hippocratic oath. Feats of skill are soon surpassed. Wisdom endures.

From ancient Greece to the Elizabethan era just about everything that pertained to man's mental health that was of undetermined origin was classified as some sort of melancholy, and that it was a considerable group is evident in Burton's "Anatomy of Melancholy." Perhaps the physicians of old gave more serious thought to man's mental perturbations than to his physical parts. In so far as they were educated men their education probably consisted in acquiring a knowledge of philosophy and logic, history and literature with interpretations and comments—what are now the by-paths of most educational courses. With this background professional knowledge was acquired through experience and medical literature.

Two hundred years ago there lived in London a Doctor James Douglas whose library contained 455 editions of Horace published between the years 1476 and 1736. Out of gratitude for the privilige of using his library, a scholar of the time dedicated a translation of the Odes to the Doctor. This translation has interested me because of the amount of research indicated and comments. It was designed to meet the needs of those of lesser capacities, those who could not understandingly read Latin poetry. This in our day includes just about everyone.

As a background for modern psychology and psychiatry there are many references to man's mental plights in the past. They did not have shell-shock at the siege of Troy, but battle-shock is mentioned in the Iliad of Homer as well as the Aeneid of Virgil. Fear and sadness seem to have embraced much of the interpretation of man's perturbation of mind well expressed in a version of Virgil's thought: "Happy he who can know the causes of things, who has trampled under his feet, that is, has subdued all fear and unalterable fate." In a lighter vein Horace wrote an ode to cheer a poet friend, unhappy through fear, in which he said: "The remedy for those whose diseases are more in their minds than their bodies is pleasant company and a moderate use of wine." Pretty good advice. However, his disconsolate friend found the company too pleasant and the wine too good and Horace had to follow with another ode exhorting his friend to behave like a gentleman and not like a barbarian from Thrace.

That the physician of that time displayed resourcefulness is related in Horace's story, This Lunatic World, in which he relates that an old miser, Opimius by name, was overtaken by a drunken stupor so profound that his heir was taking stock of his hoarded wealth when his physician brought him to in this way. He told the heir to place a table near, empty some bags of coin on it and begin to count. In that way he revived him. Then as a stimulant he recommended a cup of rice gruel. But Opimius must know the cost of such luxuries, and when the doctor answered, "A mere trifle of eight cents," he asked, "What does it matter whether I die of disease or of robbery and plunder." Opimius had something other than a headache to worry him when he came to. In this same story Horace observes, on the perversities of the mind, that one complaint often follows another, as when a headache becomes a stomachache, or a stitch in the side. This metamorphosis of symptomatology is a problem today as it was two thousand years ago.

"Socrates, in Plato, would prescribe no physick for Charmides' headache 'till first he had eased his troublesome mind; body and soul must be cured together, as head and eyes.

> Folly to cure the eye unless the head be sound,
> To patch the ailing head until the body's whole,
> To drug the feeble frame were not profound
> Unless a tonic's given to the soul."

TUMORS OF THE NECK: THEIR DIAGNOSIS AND TREATMENT

Part II: Chronic Inflammatory Swellings of the Neck

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LIGNEOUS PHLEGMON

This is a slow, indolent inflammation which involves the lateral surface of the neck, arising in the submaxillary region and occasionally extending down to the clavicle. It is usually unilateral and seldom suppurates. The supple cervical tissues become hard, resisting and boardlike, although they are not painful or tender. The skin has a brawny, purplish tinge and pits on pressure. The concomitant myositis accounts for the wry neck.

Treatment consists in making multiple incisions through the diseased tissues. Frank pus is not encountered, but the incision releases the tissue tension, permitting better vascularization. Frequent hot moist packs supplemented by irrigations, ultra violet light and supportative measures are usually curative.

TUBERCULOUS ADENITIS

Tuberculosis of the lymph nodes constitutes a common form of cervical tumor. While there has been a striking decrease in its incidence during the past fifteen years, many cases are still seen, particularly among the clinic or dispensary patients. Improved hygienic conditions, the pasteurization of milk, the elimination of infected cattle, the wide-spread extirpation of pharyngeal and faucial tonsils and the segregation of adults with active pulmonary lesions are largely responsible for the effective control of this disease.

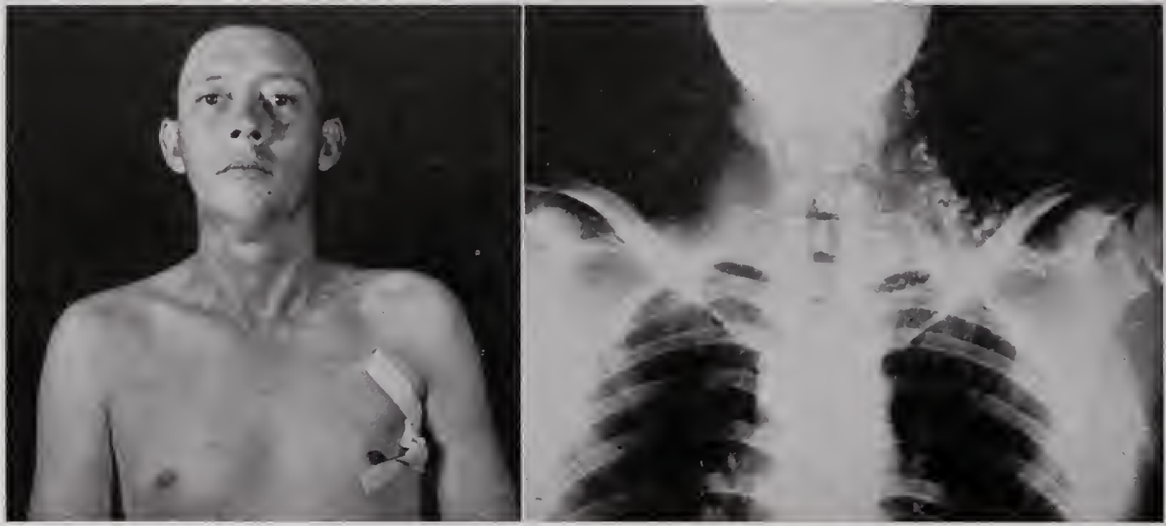

FIG. 1-A. FIG. 1-B.

Part II. Fig. 1. (A) Note the supraclavicular and axillary lymphadenopathy. (B) Calcified lymph glands are indicative of tuberculous involvement.

Tuberculosis of the cervical nodes is relatively a disease of children and growing people. It is never congenital, is seldom seen before the age of two years, and is usually expressed during the first two decades of life. The submaxillary and carotid nodes are the first to become involved because they drain the initial foci situated in the tonsils and the pharynx. In the primary phase the lymph nodes are small, discrete, movable and elastic. They are slightly tender, but give no evidence of fluctuation or increased local temperature. As the infection spreads, it penetrates the nodal capsule and produces a periglandular inflammation causing the adjacent nodes to coalsce into an ill-defined, immovable mass which may show one or two areas of softening. During this phase of dissemination, the patient may complain of malaise, ease of fatigue and may even have a mild febrile reaction. As the destructive process becomes more advanced, the necrotic glands degenerate and form cold abscesses which may discharge their contents from multiple cutaneous fistulae. If a pyogenic infection supervenes, a troublesome cellulitis may ensue.

Accurate diagnosis sometimes depends upon studies of biopsied tissue. In such an event, it is extremely important that the diseased gland be removed by extracapsular enucleation and not by fragmentation. The latter method merely scatters the infection and invites secondary pyogenic contamination with fistulous formation. Roentgenograms are informative when they visualize fibrotic or calcified lymph nodes or when they demonstrate associated osseous or pulmonary lesions. Fig. 1.

The treatment of tuberculous adenitis is primarily a medical problem but it may occasionally require the assistance of the radiologist or surgeon. It is paramount that the source of infection be eliminated. Likewise, if the tonsils and adenoids are acting as the portals of entry they should be removed, for then high caloric diets, heliotherapy, rest and general systemic measures will frequently result in a spontaneous cure.

Patients with multiple discrete lymph nodes and those with a diffuse agglomeration of adjacent glands usually make an excellent response to irradiation, for even though the degenerative process may have progressed to the stage of caseation, roentgenotherapy will induce sufficient fibrosis to overcome the active infection. Occasionally cold abscesses become so large that they must be evacuated but intervention should be postponed until all other forms of conservative therapy have failed. It is to be hoped that simple aspiration will be effective, but a recurrence of the purulent collection necessitates adequate surgical drainage, supplemented by complete removal of the caseating glands. If the abscess cavity is very large, it should be firmly packed with iodoform gauze for a period of two or three days, to minimize secondary infection and stimulate the formation of granulation tissue. Seldom have persistent sinuses followed such procedures. Single or multiple fistulae respond favorably to excision of the entire field. Deforming block dissections of the neck are no longer necessary for such simple maneuvers as proper hygienic regimentation, irradiation and an occasional surgical drainage have proved much more effective.

ACTINOMYCOSIS

Actinomycosis is an infective granuloma which has definite predilection for cervico-facial tissues. The actinomyces bovis is a normal inhabitant of the buccal cavity and does not live outside of the body. This explodes the postulate that infections are acquired from infected cattle or from chewing infested grasses. Recent investigations indicate that these fungi have ready access to any wound or laceration of the mucous membrane of the mouth and pharynx but they do not grow unless anaerobic conditions are present. Hence, actinomycotic lesions are more apt to follow penetrating wounds such as those caused by extraction of teeth, piercing the mucous membrane with tooth brush bristles, grasses or "barley barbs."

The symptoms depend on the type of tissue involved, the extent of the destructive process, and the degree of secondary infection. The initial focus usually involves the gums or mucous membrane, forming a hard, indurated tumor which slowly spreads by peripheral extension. Fig. 2. If the parotid and temporal areas are invaded, trismus is the outstanding symtom. If the tongue or pharynx are involved the resulting dysphagia is most annoying. As the destructive process spreads, the central portion undergoes liquefaction and multiple cutaneous sinuses are formed from which a thin yellow pus exudes. Pain is seldom present and systemic reactions are few, providing there is no secondary infection. At times the fungi may invade the regional nodes, skull, jawbone, and even the mediastinum. In one instance a large retropharyngeal abscess prompted the patient to seek relief and examination demonstrated a small actinomycotic ulcer of the gums to be the provocative lesion.

The presence of "sulphur granules" or branching mycelium in the discharging pus confirms the diagnosis but unfortunately negative findings are meaningless. Frequently the superimposed pyogenic infection predominates so that the "fungus rays" are not found in the escaping secretions. In such instances examination of a freshly opened abscess or histological studies of biopsied tissues may be informative. Roentgenograms may reveal the extent of the diseased process, particularly if the radiopaque substance is introduced into the sinus tracts.

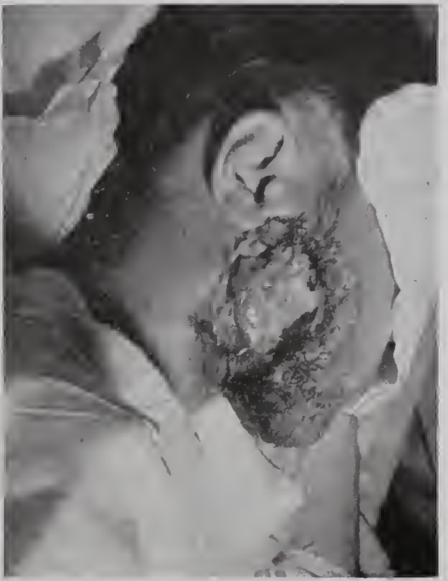

FIG. 2—PART II

Fig. 2. A large actinomycotic ulcer of the face showing central ulceration and peripheral extension.

Cervicofacial actinomycosis usually responds to energetic treatment particularly if it is instituted early. Small, localized, non-suppurative lesions may entirely disappear under the influence of irradiation. Radium is more effective than roentgenotherapy. If the lesion is progressively invading adjacent tissues, surgical excision is indicated. If abscesses are present they must be opened widely to establish free drainage. It is not sufficient merely to evacuate the pus but all necrotic tissue must be removed and the residual pockets and sinuses thoroughly curetted. Deep wounds should be packed with iodoform gauze for 48 to 72 hours, after which frequent irrigations with oxydizing solutions will inhibit the growth of the microaerophilic fungi. Complementive irradiation should be used in every case. Potassium iodides have a beneficial effect and can be given in relatively large doses. While not curative, the iodides exert a non-specific reaction which causes the granuloma slowly to undergo recession. It is important that every patient be observed for several months after the tumor mass has disappeared for small recurrent granulomas may appear, and immediate treatment will prevent further extension. Deep-seated lesions which lead into the mediastinum, jaw bones, lungs or gastrointestinal tract may have an unfavorable prognosis.

HOMER DAVIS, B.S., M.S., M.D., F.A.C.P.

President, Nebraska State Medical Association, 1938

BIOGRAPHICAL NOTES: Dr. Davis was born June 13, 1872, near Chicago, Ill., of Welch-German parentage. He attended public schools and academy in Illinois until his public career began as a country school teacher. He went to South Dakota to teach school. He enrolled in South Dakota State College from which College he received the degrees of Bachelor of Science and Master of Science. He served as Superintendent of Schools and State Conductor of teachers' institutes. With money earned from this work he enrolled as a medical student in the Omaha Medical College and graduated as an M. D. in 1900. He immediately located in Genoa and has enjoyed prominent citizenship in that community. Dr. Davis served as a Major M C U. S. A. for 18 months during the World War. He has been Union Pacific surgeon for 35 years.

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THE "BLOOD TEST" AND THE CAMPAIGN AGAINST SYPHILIS

Thanks to the capable leadership of Surgeon-General Thomas Parran, the campaign against syphilis has taken the country one may say, by storm. That the cause is a worthy one must be clear to every one who has seen the ravages of this treacherous disease in its various phases. That it is receiving our full support is only natural, for who better than the doctor is in a position to evaluate the blessings of the successful eradication of syphilis, and who more than the physician is ever trying to relieve mankind of its physical grief?

In our sincerity to help the United States Public Health Service in its laudable efforts, we must not allow public sentiment to overwhelm our scientific reasoning. We must retain our full knowledge of syphilis as the most protean disease to which man is heir, and above all else bear in mind its capacity for mimicry. Mass movements such as this campaign exemplifies are too free with generalizations to fit the individual patient. While it is desirable for every individual to undergo a serological test for syphilis, the routine herding together of large groups of young men and women for the purpose of "blood-testing" in an effort to "pep up" the campaign is dangerous. The possibility of error is too great to rely on the blood tests alone. Who has not seen a case of clinical syphilis where the Wassermann test was reported negative and vice versa?

We must make every effort to keep hysteria out of the picture. The public should know that syphilis is a menace to the individual and to every one around him, but of no less importance is the knowledge that the blood test is not the only criterion in the diagnosis of the disease. Other factors are of equal and even greater significance. In the end the diagnosis of syphilis is a problem for the clinician and not for the laboratory technician. And in making such a diagnosis the examination of the blood cannot take the place of the examination of the patient.

THE OUNCE OF PREVENTION

The campaign against syphilis it is hoped through its exemplary frankness will pave the way for a broader understanding of the function of the physician to his patient. Many preventive measures, the efficacy of which has been established for many years, are not being utilized because of the diffidence of doctors in not urging these measures upon those under their care. Immunization against smallpox and diphtheria are well recognized procedures, the employment of which has already saved innumerable lives. Yet there are today many thousands of children in the schools who are unprotected. The use of whooping cough vaccine, of scarlet fever toxin as prophylactics against their respective diseases is also gaining ground.

The value of the periodic examination with the possibility of detecting early tissue changes thus affording timely treatment of disease conditions should be called to the attention of our patients whenever an opportunity presents itself. It is true that people evince interest in health only during the time of illness. It is also true however, that the public is becoming increasingly conscious of the value of health preservation and that intelligent people as a rule, are amenable to reason on this point. Education is essentially a slow process, but persistence will undoubtedly bring good results.

Mental hygiene is a field rich in possibilities. Although at the present time this movement is not characterized by scientific clarity, sufficient practical information is available for utilization, especially in connection with the care of infants and children. Training for acceptable conduct, avoidance of emotional pitfalls in later years, these accomplishments are possible, to a great extent, through the application of known principles underlying mental hygiene. The fact that some mothers appear a bit over-enthusiastic over its theoretical possibilities does not necessarily condemn the whole system. On the contrary such a lay attitude must stimulate the physician to study in order that he may be enabled to guide his patients in their quest for this intriguing information.

The time is coming when the doctor's service in the community will be gauged not by the number of patients he has cured but by the conscious effort he has made in keeping his community in optimum health.

NEWS AND VIEWS

We found this in a recent issue of the Hardy "Herald": "Hardy Needs a Doctor: We still believe Hardy is a good location for a young doctor. A doctor should not expect to locate here or any where else and expect a big practice from the start. He will have to do just like the rest of us have done—take the bitter with the sweet, and finally he will be established here and will eventually build up a practice that will pay him more than locating in a larger town. But if a doctor decides to locate here he must be willing to bide his time and eventually, we are sure, he will succeed."

Under the sponsorship of the Urban League with the cooperation of the Lancaster County Medical Society, Lincoln observed Negro Health Week from April 3 to 10. Addresses on the variour phases of personal and community hygiene were delivered by members of the Medical Society.

Nebraska City is establishing an out-patient clinic to serve the County Poor. According to statements in the press after the clinic has been established only bedfast patients on County support will receive home care from the County physician.

Dr. J. E. Uridil recently addressed the Hastings Woman's Club on Cancer.

The Richardson County Medical Society held a banquet in behalf of Dr. and Mrs. J. A. Waggener of Humboldt, in honor of the couple's sixtieth wedding anniversary. The doctor is 85 years old, and in good health. His practice, from what we hear, is larger now than it was 62 years ago when he first hung out his shingle.

Many of the communities in the State are actively participating in the fight against venereal disease. From the clippings that reach the editor's desk one would suspect that the former reluctance on the part of newspapers to designate these diseases by name may have been due more to the difficulty in spelling the words than to actual timidity of the publishers.

Dr. Elmer Hansen of Lincoln, addressed the Commercial Club of David City on "The Campaign Against Syphilis."

Dr. H. L. Kindred of Meadow Grove was tendered a banquet in March by the citizens of his area, in honor of his forty-five years of service as physician in the community.

Dr. Charlotte Siever was named one of Fremont's "First Citizens" at a recent dinner of the Fremont Business and Professional Women's Club.

The Gage County Medical society honored two Beatrice doctors who have completed fifty years of service in their profession. They were Dr. C. A. Bradley, who has practiced medicine 52 years, and Dr. C. P. Fall, completing his 50th year of service this year. Dr. H. D. Runty, president of the society, presented medals to the two. Dr. Ira N. Pickett of Odell and Dr. Charles C. Gafford of Wymore, both of whom have completed a half century of service in the medical profession, will be honored at a later meeting.

Dr. Warren Thompson of Omaha was elected a member of the board of governors of the American College of Physicians at the convention in New York City. His term runs to 1941.

Speaking in connection with cancer control, Mrs. R. L. Cochran recently stated "This is really a woman's campaign, as more women than men suffer from cancer. Women have more time and energy for such a crusade. And women are the guardians of our family's health."

A crippled children's clinic was held April 14 under the auspices of the Southwest Nebraska Medical Association and the Elks Lodge at McCook, with the assistance of the State Crippled Children Division. Among the guest physicians participating in this work were Drs. James Martin, Herman Johnson and Richard Young, all of Omaha.

Communities in need of physicians, according to press notices: Haigler, Carleton and Scotia.

Dr. A. L. Miller of Kimball, State Senator, is expected to file for Lieutenant Governor on the Republican ticket.

Creighton University Medical School is the recipient of the library of the late Dr. John H. Fochtman of Cozad.

Dr. D. M. Harris of Lincoln has been named Director of the State health project in Richardson and Pawnee Counties.

MANY PHYSICIANS AND THEIR FAMILIES WILL "SEE AMERICA" ENROUTE TO THE CONVENTION IN SAN FRANCISCO

Officials of this Society were pleased to learn from the American Express Company, Official Transportation Agents for the Convention tours, that they have already received a very excellent response from physicians and their families, which indicates that the San Francisco Convention will be a great success. It is recommended that members of this Society who intend to participate in the Convention apply at an early date to the American Express for their tour reservations, as this will assure them of receiving the type of Pullman accommodations they desire.

This is the first time that the physicians have been offered the facilities of de-luxe special trains visiting the scenic attractions of the west, at a very nominal all-expense cost from your home city. Traversing a route that contains many wonders, one's particular preferences are bound to be among them. For instance, the Indian Pueblo District with its remnants of an ancient civilization long vanished from this continent. The Grand Canyon offers its grandeur of scenic attractions. Southern California, its glowing, sunfilled cities and orange empires, Spanish Missions, Catalina Island and the Pacific rolling up to the edge of white sands. That is the route to San Francisco and the Convention.

Returning, there is a choice of two routes. One includes the charming cities of America's Northwest: Portland, Seattle, Victoria, Vancouver and the majestic Canadian Rockies and its resorts. Rout Two winds through Yellowstone National Park and its world-famous geyser region, through Salt Lake City, and the scenic beauties of the Royal Gorge, Colorado Springs and the mile-high city, Denver.

That is but a rough outline of the itineraries offered to physicians planning to attend the Convention this June. These special train tours are restricted to physicians, their friends and families, and have been made possible through the united interest and support of twenty-five state medical societies which makes it possible to offer the tours on an economical, all-expense basis. This is an ideal opportunity to enjoy a wonderful vacation with your family and in the company of friends and colleagues in the Society and in other state Societies.

The tuberculosis patient has a definite responsibility to himself, to the physician and to those who sacrifice to see him through the period of cure.

APPROVED HOSPITALS IN NEBRASKA

The following Nebraska hospitals have been placed on the approved list of the American College of Surgeons. Numbers refer to available beds.

Alliance—St. Joseph's Hospital	91
Beatrice—Lutheran Hospital	46
Columbus—St. Mary's Hospital	134
Grand Island—St. Francis Hospital	145
Hastings—Mary Lanning Memorial Hospital	100
Ingleside—Hastings State Hospital	1,520
Lincoln—	
Bryan Memorial Hospital	113
Lincoln General Hospital	174
Lincoln State Hospital	1,272
Nebraska Orthopedic Hospital	110
St. Elizabeth's Hospital	200
Veterans Administration Hospital	197
McCook—St. Catherine of Sienna Hospital	70
Norfolk—Norfolk State Hospital	1,050
Omaha—	
Bishop Clarkson Memorial Hospital	142
Creighton Memorial St. Joseph's Hospital	448
Douglas County Hospital	432
Evangelical Covenant Hospital	102
Immanuel Hospital	146
Lutheran Hospital	115
Nebraska Methodist Episcopal Hospital	200
St. Catherine's Hospital	175
University of Nebraska Hospital	197
Scottsbluff—West Nebraska Methodist Episcopal Hospital	60

EFFECTS OF 'BENZEDRINE SULFATE' ON PROBLEM CHILDREN

Bradley (Am. J. Psych. 94:577, Nov., 1937) reports on the effects of 'Benzedrine Sulfate' (benzyl methyl carbinamine sulfate, S.K.F.) administered to a group of 30 "problem" children, aged 5 to 14 years, under very favorable conditions.

The children chosen for the study manifested various behavior disorders, ranging from specific educational disabilities to the retiring schizoid type and the aggressive, egocentric epileptic. They were observed, without subjective questioning, by a special psychiatric nurse for a period of 3 weeks. Each child received a daily morning dose of 'Benzedrine Sulfate' during the second week, the first and third weeks being regarded as control periods. Twenty mg. was the usual dose, but this varied according to the individual.

Although these children had been receiving the usual intensive training available at the Bradley Home, 14 of them, or 47%, promptly "responded in a spectacular fashion" to 'Benzedrine Sulfate' therapy, showing marked improvement in speed of comprehension and accuracy of performance, together with a keen desire for accomplishment. Eight others showed some improvement. In all cases improvement disappeared the first day therapy was discontinued.

In emotional response, 15 children, or 50%, became subdued. Seven of these were of the erratic and aggressive type, and the author suggests that "Benzedrine Sulfate,' by stimulating the higher centers, may increase voluntary control in such cases. Seven other children reported a definite euphoria. The remaining 8 had varied responses. One case of agitation and two cases of anxiety were observed.

In spite of the "attractive results obtained . . . and the apparent low toxicity of the drug," the author concludes that it is too early definitely to recommend 'Benzedrine Sulfate' in the general treatment of pediatric behavior problems, and that additional studies should be made in this field.

COMMITTEE ON MEDICAL AND PUBLIC HEALTH EDUCATION OF THE NEBRASKA STATE MEDICAL ASSOCIATION. THIS COMMITTEE MET AT PAXTON HOTEL 6 P. M., NOVEMBER 5TH, 1937

PRESENT: J. D. McCarthy, George Misko, George W. Covey, A. L. Miller, members of committee. R. B. Adams, Secretary, M. C. Smith, Executive Secretary, and R. W. Fouts, President of Nebraska State Medical Association, and P. H. Bartholomew, Director of State Department of Health. W. P. Wherry, Chairman and W. J. Arrasmith, committee members not present.

A communication signed by Dr. Wherry, Chairman of Committee on Medical and Public Health Education and Dr. McCarthy, Chairman of Speakers Bureau, covering the proceedings of the joint meeting of this committee and the Maternal and Child Health Committee, and a special meeting of Wherry and McCarthy with the chairman of all subcommittees; namely Sage, Hancock, Kelly, Tomlinson and Uren was read. Their report states * * * "It seems, however, quite impossible to accomplish the necessary premise under the existing organization." The report stated this was due to the fact that the activities could not be financed as originally proposed by the committee. The importance of a central office and adequate budget for its operation was stressed. After extended discussion, the following motion was made by Covey.

"Resolved that this committee proceed as directed by the House of Delegates. That we consider the plans of the various subcommittees when presented to us for approval. That we refer to these respective committees with our recommendations all matters pertaining to the activity of that committee." Seconded by Miller and carried.

Motion by McCarthy that a copy of this motion be sent to the Chairman and members of each subcommittee; ie, Tuberculosis, Venereal Disease, Fracture, Maternal and Child Health, Cancer, and Committee for Amelioration of Deafness. Seconded by Misko and carried.

Motion by Covey that the Bulletin and State Medical Journal carry instructions for the contacting of The Speakers Bureau, together with information as to speakers and programs available. Seconded by Miller and carried.

Moved by Miller and seconded by Covey that no per diem be approved for speakers from the Committee Speaker Bureau, but that expense voucher be approved and submitted to the State Director of Health on the Tuberculosis and Venereal Disease programs. Carried.

Dr. Bartholomew addressed the committee and stated that The State Health Department stood ready to cooperate in every detail and participate in the activities as previously outlined by the Committee on Medical and Public Health Education. He stated that since the participation in all activities of a medical nature that called for the expenditure of Federal funds were predicated upon the approval of the Nebraska State Medical Association, he would approve only those programs that were first endorsed by the Committee on Medical and Public Health Education of the Nebraska State Medical Association. That at the present time there were three programs, in progress, all subsidized by State and Federal funds, and that in the interest of efficiency and economy all must be correlated and coordinated under the Committee on Medical and Public Health Education as formulated by The House of Delegates of the Nebraska State Medical Association at their last annual meeting, May 1937.

Other matters pertaining to State Medical Association affairs were discussed and the meeting adjourned at 12:15 A. M.

W. P. WHERRY, Chairman
Committee on Medical and Public
Health Education.

APROPOS OF THE ANTI-SYPHILIS CAMPAIGN

MEMBERS OF THE LANCASTER
COUNTY MEDICAL SOCIETY:

In conformity with the motion adopted by this Society at the last meeting, your committee appointed by the Chair to confer with the Public Health Committee of the Junior Chamber of Commerce concerning the Anti-Syphilis Campaign carried on by the Junior Chamber of Commerce, renders the following report:

A frank and free discussion of all matters pertaining to this campaign by this lay body was held. It was ascertained that this campaign had its conception in the mind of the Chairman of the Public Health Committee of the National Junior Chamber of Commerce; that this campaign was indorsed by the National Junior Chamber of Commerce in their recent annual meeting in St. Paul, Minnesota. The objective of the program as outlined was the education of the people concerning Syphilis as the first step in the fight to stamp it out, and that the general policy of their program looked first for cooperation from the medical profession. Namely, "that all public statements concerning the disease be made by qualified medical men selected by the organized medical societies, and that all material used be passed by a committee of such a society," and "that membership on the Junior Public Health Committee be limited to laymen to avoid possible conflict between junior associations and medical society on questions having technical or scientific significance," and "that avoidance and curability of Syphilis be treated as of equal importance." The National Junior Chamber, recognizing the delicacy of their proposed program, incorporated this further statement: "The characteristic energy, enthusiasm, vigor, and ability of men in the Junior Chamber movement is no substitute for expert technical knowledge, and, therefore, we earnestly recommend that all effort of any campaign of this or similar character be carried on with the cooperation and guidance of the organized medical society in each community."

In the present instance of this Anti-Syphilis Campaign by the Junior Chamber of Lincoln it is of vital interest to note that the Public Health Committee of local Junior Chamber in their enthusiasm to start this campaign did not consult with the organized medical body representative of Lancaster County, and that the Junior Chamber did not, in conformity with the national mandate, draw up an outlined program and present it to the Lancaster County Medical Society for perusal, recommendations, and indorsement before starting this campaign. Properly informed speakers from the Lancaster County Medical Society to represent this body were not asked for; instead of following this outlined logical course, the Public Health Committee of the Junior Chamber conferred with Dr. M. F. Arnholt, Chief of the Department of Health of the city of Lincoln, and subsequently, with Dr. E. G. Zimmerer, who has some official capacity in the Venereal Disease section of the State Health Department. These gentlemen gave tacit approval to the promotion of this program by the said Junior Chamber Health Committee. Which committee assumed in their ignorance that these gentlemen spoke for organized medicine.

Under this assumption and with the promotional support of the Department of Health of the city of Lincoln an active campaign was instituted, and which campaign largely resolved itself into frenzied promotional activities for the universal Wassermannizing of all citizens of the city of Lincoln.

This campaign inferred that there were now 6,000 cases of Syphilis of which only about 400 were under active treatment in the city of Lincoln. Therefore, the rest of the individuals with a positive Wassermann were a public menace. This reacted to arouse considerable public frenzy. The calm, sane, educational program for the public as to the avoidance of Syphilis and its curability received little stress. The necessity for Wassermannizing every individual in the city of Lincoln was given much publicity in the newspapers with the reaction that the fair name of Lincoln was given much unfavorable publicity throughout the state. The feeling became engendered in the minds of parents with children in the University of Nebraska that their children were subjected to contamination from Syphilis.

The campaign had been under way for a number of weeks before the Public Health Committee of the Junior Chamber of Commerce drew up a program conforming to that of the National Junior Chamber of Commerce, and which program was submitted to the Lancaster County Medical Society for ratification and cooperation. In view of the adverse publicity which had been engendered, it was the majority opinion of the Lancaster County Medical Society that the program so presented should not be indorsed, but that a special committee appointed by the Chair should confer with the Public Health Committee of the Junior Chamber of Commerce.

Your Committee presents the foregoing report and makes the following recommendations:

FIRST, that the Lancaster County Medical Society express a willingness to cooperate at all times with any civic agency in the proper dissemination to and the education of the public concerning any disease inimical to the public health.

SECOND, that at the request of any civic body the Lancaster County Medical Society will furnish qualified speakers to present any given medical subject.

THIRD, that in the present campaign directed toward Syphilis, the Lancaster County Medical Society frowns on the dissemination fear psychology and direct such medical speakers as may cooperate in this campaign to stress the educational features toward the avoidance of Syphilis and the curability of the same.

FOURTH, that in the cooperation of the Lancaster County Medical Society with any civic body for dissemination of knowledge concerning Syphilis the publicity material be passed on by the Publicity Committee of the Lancaster County Medical Society.

Respectfully submitted,

(Signed) Everett E. Angle, Chairman,
W. W. Carveth, M. D.,
Arbor D. Munger, M. D.

This Society is to be congratulated upon its stand in taking proper leadership.—Editor.

(STATE) DEPARTMENT OF HEALTH AND U. S. PUBLIC HEALTH SERVICE

Cooperating With

NEBRASKA STATE MEDICAL ASSOCIATION SPEAKERS' BUREAU

1031 Medical Arts Building
Omaha, Nebraska

The following is the schedule of programs listed in the Speakers' Bureau office for the months of January, February and March, 1938:

SCIENTIFIC PROGRAMS

Jan. 10, Dundy County Medical Society, Dr. H. B. Hamilton, "Food With Relation to Health and Disease."

Jan. 18, Norfolk, Madison Six-County Medical Society, Dr. Warren Thompson, Omaha, "Diagnosis of Heart Disease;" Dr. J. D. McCarthy, Omaha, "Treatment of Heart Disease."

Jan. 25, Pawnee City, Third Councilor District, Dr. R. L. Traynor, Omaha, "The Diarrhoeas;" Dr. W. J. McMartin, Omaha, "The Use of Sulfanilamide in Urinary Tract Infections"; Dr. F. P. Murphy, Omaha, "The Management of Occipito-Posterior Presentation;" Dr. H. F. Johnson, Omaha; Dr. J. W. Martin, Omaha, Demonstration of Proper Treatment of the Various Fractures Involving Shoulder, Arm and Hand.

Feb. 1, *Auburn, Third Councilor District, Dr. Palmer Findley, "Puerperal Infection."

Feb. 8, *Falls City, Third Councilor District, Dr. E. S. Wegner, Lincoln, "Infectious Diseases of Childhood."

Feb. 10, *Kearney, Ninth Councilor District, Dr. Earl Sage, Omaha, "Public Health Aspects of Obstetrics."

Feb. 15, *Tecumseh, Third Councilor District, Dr. H. E. Harvey, Lincoln, "Adaptation of Modern Methods to Country Practice;" "Being Born"—Lay Audience.

Feb. 17, *Kearney, Ninth Councilor District, Dr. David Findley, Omaha, "Gonorrhea Complicating Pregnancy."

Feb. 22, *Humboldt, Third Councilor District, Dr. H. B. Hamilton, Omaha, "The Child's Nutrition With Relation to Health."

Feb. 23, *O'Neill, Eighth Councilor District, Dr. E. R. Hays, Omaha, "Health Problems in the School Child."

Feb. 24, Crete, Dr. Harry Everett, Lincoln, "The Surgery of Pulmonary Tuberculosis;" Dr. Harry Flansburg, Lincoln, "Pulmonary Infarcts."

Feb. 24, *Kearney, Ninth Councilor District, Dr. J. Harry Murphy, Omaha, "Tuberculosis in Childhood."

Mar. 1, *Beatrice, Third Councilor District, Dr. J. A. Henske, Omaha, "Rheumatism and Heart Disease in Childhood."

Mar. 2, *O'Neill, Eighth Councilor District, Dr. E. S. Wegner, Lincoln, "Infectious Diseases in Childhood."

Mar. 3, *Kearney, Ninth Councilor District, Dr. Floyd Clarke, Omaha, "Prevention of Disease in Childhood."

Mar. 8, *Pawnee City, Third Councilor District, Dr. Herman Jahr, Omaha, "Behavior Disorders of Children."

Mar. 9, *O'Neill, Eighth Councilor District, Dr. L. O. Hoffman, Omaha, "Syphilis in Pregnancy."

Mar. 9, *Columbus, County Medical Society, Dr. Palmer Findley, Omaha, "Puerperal Infection Making Childbirth Safe"—(Lay); Dr. Floyd Clarke, Omaha, "Prevention of Disease in Childhood Infantile Paralysis"—(Lay); Dr. O. J. Cameron, Omaha, "The Early Diagnosis of Syphilis, The Venereal Disease Problem"—(Lay).

Mar. 10, *Kearney, Ninth Councilor District, Dr. Paul Bancroft, Lincoln, "Care of Premature."

Mar. 14, Dundy County Medical Society, Dr. E. S. Wegner, Lincoln, "Infectious Diseases."

Mar. 16, *O'Neill, Eighth Councilor District, Dr. H. S. Morgan, Lincoln, "Care of Women During Pregnancy."

Mar. 17, *Kearney, Ninth Councilor District, Dr. H. S. Morgan, Lincoln, "Care of Women During Pregnancy."

Mar. 24, Fairmont, Fillmore-Saline County Medical Society, Dr. Clayton Andrews, Lincoln, "The Importance of the Differential Diagnosis Between Duodenal and Gastric Ulcer; Dr. E. B. Reed, Lincoln, "The Question of Septicemia."

LAY PROGRAMS

Jan. 4, Omaha, Health Division, Council of Social Agencies, Dr. J. Weinberg, Omaha, "For All Our Sakes."

Jan. 4, Omaha, Y. W. C. A., Dr. Amelia Brandt, Omaha, "For All Our Sakes."

Jan. 6, Omaha, University of Omaha Student Assembly, Dr. C. C. Tomlinson, Omaha, "For All Our Sakes."

Jan. 11, Omaha, Women's Inter-Club Council, Dr. E. I. McEachen, Omaha, "For All Our Sakes."

Jan. 11, Omaha, P. T. A.—St. Cecelia's School, Dr. J. Frank Murphy, Omaha, "For All Our Sakes."

Jan. 14, Omaha, Masonic Temple, Dr. Donald Wilson, Omaha, "Venereal Disease."

Jan. 17, Beatrice, Woman's Club, Dr. C. C. Tomlinson, Omaha, "For All Our Sakes."

Jan. 17, Hastings, League of Women Voters, Dr. Ernest Kelley, Omaha, "For All Our Sakes."

Jan. 18, Omaha, Chamber of Commerce, Dr. J. D. McCarthy, "Health District Bill and County Hospital Situation."

Jan. 19, Omaha, P. T. A.—Corrigan School, Dr. S. E. Pawol, Omaha, "For All Our Sakes."

Jan. 23, Omaha, All Saints Church Young People, Dr. A. E. Bennett, Omaha, "Mental Hygiene Problems During Adolescence."

Jan. 27, Omaha, Benson Women's Club, Dr. E. I. McEachen, Omaha, "For All Our Sakes."

Feb. 1, Omaha, National Exchange Club, Dr. J. D. McCarthy, Omaha, "Uncontrolled Venereal Disease—An International Disgrace."

Feb. 16, Lynch, Eighth Councilor District, Dr. Herman Jahr, Omaha, "Training of Child Habits."

Feb. 16, Spencer, Eighth Councilor District, Dr. Herman Jahr, Omaha, "Training of Child Habits."

Feb. 17, McCook, Junior College, Dr. A. E. Bennett, Omaha, "Modern Treatment of the Mentally Ill in a General Hospital, Including the Modern Care of Nerve Syphilis."

Feb. 23, Bertrand, Dr. R. E. Harry, York, "Tuberculosis."

Mar. 7, Fremont, Woman's Club, Dr. James F. Kelly, Omaha, "Danger Signals;" Dr. C. C. Tomlinson, Omaha, "Syphilis."

Mar. 14, Wahoo, Luther College, Dr. C. A. Owens, Omaha; Dr. Donald Wilson, Omaha, "Venereal Diseases."

Mar. 13, Plattsmouth, Methodist Church, Dr. Palmer Findley, Omaha, "Fighting Cancer With Knowledge."

Mar. 23, Lynch, Eighth Councilor District, Dr. Paul Bancroft, Lincoln, "Care of the Premature."

Mar. 23, Spencer, Eighth Councilor District, Dr. Paul Bancroft, Lincoln, "Care of the Premature."

RADIO PROGRAMS

Mar. 17, Omaha—KOIL, P. T. A.—Health Committee, Dr. J. Harry Murphy, Omaha, "Immunization."

NURSES

Jan. 19, Omaha, Student Nurses—University and Clarkson Hospitals, Dr. O. J. Cameron, Omaha, "For All Our Sakes."

—J. D. McCarthy.

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*Professional and lay audiences addresses.

THE SOCIETIES

The Omaha Douglas County Medical Society

March 8, 1938

The regular meeting of the Omaha-Douglas County Medical Society was held on Tuesday, March 8, 1938, at 8 p. m., Medical Arts Auditorium, President Wearne presiding.

The scientific program was opened by Dr. Richard H. Young, who gave a report on "A Case of Influenzal Meningitis with Recovery," and which was discussed from the floor by Dr. Floyd Clarke.

Dr. C. M. Wilhelmj's subject, "A New Concept of the Control of Gastric Acidity," was discussed by Dr. F. C. Hill and Dr. Adolph Sachs, with further discussion from the floor by Dr. Paul H. Ellis.

The guest speaker of the evening, Dr. R. K. Dixon, of Denver, Colorado, was introduced by Dr. J. F. Gardiner. His subject was "Diagnosis and Management of Functional Conditions of the Gastrointestinal Tract." Discussion from the floor by Drs. M. C. Howard, Adolph Sachs, E. C. Henry, Rodney Bliss and C. M. Wilhelmj.

Meeting adjourned 9:50 p. m.

March 22, 1938

The regular meeting of the Omaha-Douglas County Medical Society was called to order at 8:00 p. m., Tuesday, March 22, 1938, at the Medical Arts Auditorium, by President Wearne.

The scientific program was opened by Dr. Floyd Clarke, who gave a report on "A Case of Nephrosis."

Dr. Edward Thompson's talk on "Statistical Study of 200 Consecutive Cases of Heart Disease," was discussed by Dr. F. W. Niehaus and Dr. M. C. Andersen, with discussion from the floor by Drs. Henske, Christensen and Sachs.

Dr. Alfred J. Brown's subject, "The Rationale of the Surgical Treatment of Empyema Thoracis as Dictated by the Pathology of the Disease," was discussed by Dr. Clyde Moore. Discussion from the floor by Drs. Howard, Herbert Davis and Dr. Adolph Sachs.

Meeting adjourned 10:00 p. m.

The Lancaster County Medical Society

March 15, 1938

The regular meeting of the Lancaster County Medical Society was held on the above date. The meeting was called to order by the President, Dr. C. F. Andrews, with about sixty members and guests from the Lincoln Dental Society present. Minutes of the last meeting were read and approved.

An official communication from the State Medical Association Secretary was read which called attention to the dead line for the payment of society dues.

Two applications for membership were read for the second time—those of Dr. Richard Frank Richie and Dr. Glenn D. Crook.

The committee appointed to investigate the antisyphilis campaign submitted the following written report which was read by Dr. A. D. Munger: (See second page of minutes). This report was discussed by Drs. P. H. Bartholomew, A. D. Munger, and G. W. Covey. Dr. F. M. Arnholt wished to go on record as saying he had not approved the campaign of the Junior Chamber of Commerce. Dr. G. W. Covey wished to add to the report, that publicity be given to the use and misuse of the Wassermann test. This motion moved, seconded, and carried. The report of the committee was approved by vote.

The entire evening was given to Dr. J. R. Jaeger, of Denver, Colorado, who presented his paper, "Tic Douloureaux" with colored motion pictures. Two other colored films were shown: one on the Treatment of Sciatica, and the other on Brain Tumors. Dr. Jaeger was given a rising vote of thanks by the members and guests.

Meeting adjourned 10:45.

Everett E. Angle, Secretary.

April 5, 1938

The regular meeting of the Lancaster County Medical Society was held on the above date, with fifty members present. The meeting was called to order by Dr. C. F. Andrews, President. Minutes of the last meeting were read and approved without addition or comment.

The first paper of the "Symposium on Arthritis" was given by Dr. Miles J. Breuer. The discussion was opened by Dr. A. D. Munger, who was surprised to learn that no case of a focus of infection of the upper urinary tract, was found in his series of fifty cases. Dr. O. A. Reinhard agreed that arthritis might be caused by a sensitization to streptococcic, and that treatment with small doses of vaccine probably helps by acting as a desensitization agent. Dr. G. W. Covey stated that Dr. Breuer's paper represented a good deal of work. He stated that he could not always find streptococci in every case of rheumatoid arthritis.

The second paper of the Symposium was given by Dr. Fritz Teal, in which he stressed rest for the affected joint, even to the use of plaster casts. Dr. F. A. Alcorn agreed that rest was essential. Dr. E. W. Hancock asked if there was not some way to give this rest without the use of the cast. Dr. W. W. Carveth asked how long immobilization is needed.

Drs. Glenn D. Crook and R. F. Richie were unanimously elected to membership.

Dr. R. B. Palmer, Chairman, Dr. L. J. Owen, and Dr. G. H. Misko were appointed by the President to cooperate with the Junior Chamber of Commerce in their campaign against syphilis.

Dr. A. D. Munger spoke on the responsibility of every member of the Society in the new constitution and by-laws about to be submitted at the next Nebraska State Medical Association meeting. Dr. Covey moved, that we consider any written proposal to change the constitution, at the next meeting. Seconded and carried.

Meeting adjourned 9:15.

Everett E. Angle, Secretary.

At the regular meeting of the **York County Medical Society** held on March 21st the following officers were elected: B. N. Greenberg, M. D., President; R. E. Karrer, M. D., Secretary and Treasurer; H. O. Bell, M. D., Delegate to the State Medical Meeting; A. J. Molzahn, M. D., Alternate Delegate.

A short business meeting was held during which action was taken on Diphtheria immunization of schools to be conducted under the auspices of the York County Medical Society. A film on Allergy was then shown.

The **Madison Six County Medical Society** met Tuesday, April 19, in the Hotel Norfolk. The program was as follows: Dr. R. L. Traynor, Associate Professor of Medicine—Creighton University School of Medicine—"Diseases of the Pericardium;" Dr. W. H. Schmitz, Associate Professor of Urology—Creighton University School of Medicine—"Prostatism, with an Endeavor to Properly Evaluate Surgical Relief."

The **Tri-County Medical Society and Woman's Auxiliary** met in Fremont March 29, at the Hotel Pathfinder. Dr. L. E. Moon of Omaha addressed the Society on "Cancer of the Rectum." Dr. David Findley's topic was "Gonorrhea in Women."

The **Cedar - Dixon - Dakota - Thurston and Wayne Counties Medical Society** met in Wayne April 5. The meeting was addressed by Drs. H. M. Odell and R. C. Adams, both of Rochester, Minn.

The **Tenth Councilor District** met at the Hastings State Hospital April 7. Dr. H. S. Andrew of Minden was elected Councilor succeeding Dr. L. W. Rork, who has served in that capacity for the past fifteen years. The scientific program consisted of papers as follows: Dr. F. W. Niehaus of Omaha, "Coronary Heart Disease;" Dr. A. H. Fechner and Dr. L. R. Nash, both of the Hastings State Hospital, "Shock Treatment by Insulin and Metrazol."

The **Ninth Councilor District** met jointly with the **Tri-County Medical Society** at St. Francis Hospital in Grand Island March 31, 1938, Dr. W. E. Rose of Kearney presiding. The scientific program follows: Dr. A. E. Bennett of Omaha, "The Treatment of Syphilis;" Dr. W. J. Arrasmith of Grand Island, "Surgical Jaundice;" Dr. A. F. O'Donaghue of Sioux City, "Backache."

Following a banquet in the evening at which Dr. Homer Davis, president-elect of the Nebraska State Medical Association, was present, Dr. C. W. M. Poynter, Dean of the Medical College, University of Nebraska, spoke on "The Doctor in Literature." Following this lecture Dr. E. C. Foote of Hastings showed motion pictures of his trip to Alaska.

AUXILIARY NEWS

The members of the Lancaster Medical Auxiliary met April 4th, for its annual luncheon and business meeting at the University Club, Lincoln. Annual reports were given by Committee Chairmen. The Membership Chairman reported eighty members for the year 1937-38. Officers elected for the year 1938-39 were:

Mrs. Elmer Hansen, President.
Mrs. C. Fred Ferciot, President-elect.
Mrs. Lawrence Finney, Secretary.
Mrs. David Hilton, Treasurer.

The business meeting was followed by a luncheon. The honored guests were representatives from seven of Lincoln's Women's civic organizations.

Dr. Richard Richie, Staff Psychiatrist of the Child Welfare Division of the Board of Control, spoke on the subject of "Some Aspects of Mental Hygiene."

MRS. C. FRED FERCIOT,
Press and Publicity.

ANNOUNCEMENT

THE AMERICAN NEISSERIAN MEDICAL SOCIETY

Office of the Secretary, 113 Bay State Road,
Boston, Massachusetts.

The Fourth Annual Session of the American Neisserian Medical Society will be held in Washington, D. C., on May 16 and 17, 1938, in the Public Health Auditorium located at 19th Street and Constitution Avenue, N. W.

The session will open with a symposium on sulfanilamide which will be timely and of great value to everyone. Perrin H. Long, M. D., of the Johns Hopkins Hospital will deliver the principal address. Dr. Long's work puts him in the position of being the country's leading authority on the chemistry, mode of action, and clinical use of sulfanilamide. The society is indeed fortunate and highly honored in having Dr. Long as guest speaker.

Following the presidential address there will be simultaneous meetings of the three following sections, Male Clinical, Female Clinical, Laboratory and Research. The Male Clinical Section will discuss in considerable detail the question of nomenclature, standard record forms, diagnosis, and cure. The Female Clinical Section will discuss diagnosis and cure. The Laboratory and Research Section will discuss bacteriology, serology, and research. The reports of these deliberations as accepted on the following day will become the society's official opinion and will serve as authoritative information which when disseminated will undoubtedly result in clarifying some of the present needless confusion. This would seem to be an important next step toward improving the management and control of gonorrhea.

The chairmen of the sections desire all possible assistance from the members who are urged to attend and take an active part in the deliberations of the section meeting most in line with their interests.

The second day will open with the business meeting following which the sections will submit their reports. There will be ample opportunity for generous discussion before the reports are accepted. The final afternoon will be devoted to the presentation of some extremely interesting papers.

C. C. Norris, M. D., President,
Oscar F. Cox, M. D., Secretary.

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HEADQUARTERS SEVENTH CORPS AREA

Office of the Surgeon

Subject: Inactive duty training for Medical Department Reservists with the St. Louis Clinics.

To: All Medical Department Reservists, Army and Navy, 7th Corps Area.

1. The annual Post Graduate Course and Clinical Conference given by the St. Louis Clinics will be held in St. Louis, Missouri, May 23 to 28 inclusive. A cordial invitation is extended to Medical Reservists of the Army and Navy. This office urges you to attend.

2. An excellent program has been arranged and a large enrollment is expected.

3. Fees:

a. The regular enrollment fee of $10.00 is waived for Reserve Officers.

b. Actual expense: A fee of $2.50 will be charged Reservists to cover the cost of the dinner honoring the Corps Area Commander, postage, and other incidentals.

4. Appropriate military credits will be given for attendance.

KENT NELSON,
Colonel, Medical Corps, Surgeon.

HUMAN INTEREST TALES

Dr. J. W. B. Smith of Albion visited in Canada in March.

Dr. and Mrs. T. L. Weeks have returned from California.

Dr. and Mrs. Charles Pollard returned from a trip to California.

Dr. B. W. Pyle is president of the Gothenburg Country Club.

Dr. and Mrs. J. J. Keegan of Omaha returned from a motor trip in the south.

Dr. Donald Waggener of Rochester, Minn., recently visited relatives in Adams.

Dr. and Mrs. D. H. Morgan of McCook spent the early part of April in Denver.

Our sympathy goes to Dr. W. A. Cassidy of Omaha, on the recent death of his mother.

Dr. and Mrs. J. A. Borghoff returned early in April from a two-weeks vacation in Florida.

Dr. L. F. Valentine of North Platte was recently a patient in the Clarkson Hospital in Omaha.

Dr. Darrell Campbell of Stamford accepted an appointment to the University Hosptial, Ann Arbor, Mich.

Dr. J. P. Gilligan of Nebraska City attended a meeting of the Southwest Clinical Society in Kansas City in March.

Dr. O. F. Lang, H. R. Miner and D. M. Harris, all of Falls City, recently attended a medical convention in Kansas City.

Dr. Earl Rogers, formerly of Central City, has accepted an Army appointment, and entered duty in Little Rock, Arkansas.

During the recent snow storm Dr. Ted Riddell of Scottsbluff was stranded on the Scottsbluff-Minatare highway for the entire day.

Dr. A. G. Pohlman, professor of Anatomy, attended the annual meeting of the Association of American Anatomists in Pittsburgh last month.

Dr. Osmyn McFararland, a recent graduate from Creighton Medical College, and lately located in Hebron, has accepted a position with the Louisiana State Welfare Department in Baton Rouge.

Among Nebraska physicians attending the annual meeting of the American College of Physicians in New York early in April were: Drs. J. D. McCarthy, Adolph Sachs, Warren Thompson, E. M. Walsh, all of Omaha, Dr. J. M. Woodward of Aurora.

Dr. and Mrs. Arthur J. Griot of Chadron have returned from an interesting trip to India. After visiting many of the tumultuous capitols in Europe and Asia the doctor concludes that he is glad to be back in the good old U. S. A. and above all that he is an American.

Dr. E. E. Pate is a new member of the psychiatric staff of the Norfolk State Hospital. The doctor has had his training in the south. He is a graduate of Vanderbilt University. Another new member of the staff is Dr. Anthony E. Colletti, formerly of Louisville, Kentucky.

OBITUARIES

Dr. William O. Colburn was born in Warren, Ill. He graduated from Northwestern University Medical School in 1904. He practiced in Stuart, Nebr., until 1916 when he came to Lincoln to practice. Dr. Colburn was known widely as a pediatrician. In 1936 during the session of the American Medical Association in Kansas City, Dr. Colburn became ill and following a long siege of cardiovascular-renal disease died April 10, 1938.

His widow and a daughter survive.

Dr. J. N. Campbell, born in 1880. Following his graduation from the Lincoln Medical College in 1902 he located in Stamford where he remained in practice for the past 35 years. He died of pneumonia on April 12, 1938. He is survived by his widow and a son, Darrell, a member of the faculty of the University of Michigan.

SUMMER DIARRHEA IN BABIES

Casec (calcium caseinate), which is almost wholly a combination of protein and calcium, offers a quickly effective method of treating all types of diarrhea, both in bottle-fed and breast-fed infants. For the former, the carbohydrate is temporarily omitted from the 24-hour formula and replaced with 8 level tablespoonfuls of Casec. Within a day or two the diarrhea will usually be arrested, and carbohydrate in the form of Dextri-Maltose may safely be added to the formula and the Casec gradually eliminated. Three to six teaspoonfuls of a thin paste of Casec and water, given before each nursing, is well indicated for loose stools in breast-fed babies. Please send for samples to Mead Johnson & Company, Evansville, Indiana.

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THE QUESTION OF SEPTICEMIA*

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Lincoln.

Any condition that carries the possibility of testing the practitioner's whole knowledge of the science of medicine may well be considered an important condition. Septicemia in its entirety may be well considered of such importance. Due to the dramatic way in which it may strike, and the high death rate that it carries, septicemia can be looked upon as the "bete noire" in medicine. Many advances have been made in the management of this condition, but still the treatment is highly experimental. Because of the uncertainty in the minds of many fine investigators, about facts related to septicemia, we feel that this infection is a real question in medicine. A review of the cases in our own community, and the conflicting counsel that seemed to prevail in many of these cases, made the author believe that this was a timely question to consider freely. The purpose of this paper is to present the more generally accepted facts about this condition and to outline the course of management that has seemed to be of service to the author in his small experience. It is deemed advisable to limit the discussion to those cases caused by the streptococcus and staphylococcus.

Much debate could ensue over the definition of septicemia. In the first place, an infection may be local or general. Local infection may be at the portal of entry or at some distance from it, due to hematogenous, or lymphatic transfer. For practical purposes, septicemia may be looked upon as a generalized infection of the blood. This implies that invading organisms multiply in and are transported by the blood stream, producing well known signs and lesions. Bacteriemia should be reserved to denote temporary invasion of the blood stream by bacteria, and generally does not produce the symptom complex attributed to this infection of the blood. Bacteriemia is common to many diseases, such as scarlet fever, pneumonia, typhoid, etc. Streptococci have been found in the blood of cases of chronic rheumatoid arthritis, without producing the picture of a blood stream infection. It is not uncommon in the course of a disease to see both types of infection occur, as for instance, the finding of a primary invasion, which is short lived, in a case of scarlet fever, and then a few days later a secondary invasion with signs and symptoms of a septicemia. A recent case of typhoid fever under observation in a local hospital followed this course, and in this particular case explained the so-called recrudescence of the disease. There are those who believe that the persistence of the bacteriemia is due to some active focus, and that the intermittent or constant discharge of bacteria gives the picture of septicemia. Some authors are of the opinion that it would be better to call the clinical state sepsis, because septicemia is so often secondary to a localized infection. However, it is well known that septicemia may prevail without much reaction at the portal of entry and in other cases the primary source cannot be found. In many cases of septicemia the pyogenic bacteria localize at different points, causing new foci of infection. This type of metastatic condition has long been called pyemia. It might well be discontinued, because pyemia is definitely a part of septicemia.

The clinical concept of septicemia is generally quite well recognized but many cases are so unusual in their progress that diagnosis may be missed. Any unusual behavior of the temperature in a case of mastoiditis anotitis media, or acute sinusitis, or tonsillitis, or septic sore throat or scarlet fever, or erysipelas, or diphtheria progressing favorably, or acute osteomyelitis in the young, or wound infection with or without lymphangitis, should make one suspect the possibility of septicemia. Every case of abortion that is febrile is always a likely possibility. If there is any sharp change in the course of any local sepsis that prior to this change has been making fair progress, septicemia will probably be the cause. This is more likely to be true if surgery has preceded this change by six to twelve hours.

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*Read before the Lancaster County Medical Society Feb. 15, 1938, and before the Filmore-Saline County Medical Society March 24, 1938.

The temperature reaction is the most instructive single sign. Accompanied with chill, it generally marks the time of primary invasion. In most cases it is a fair criterion of the intensity of the infection. The daily rise will usually be above 102°, and many will reach 106°. Drenching perspiration commonly follows any recession of the temperature. The larger number will show daily remissions, but intermissions of twenty-four to forty-eight hours are not uncommon. The continuous temperature is surely the exceptional finding. The pulse and respiratory rate keep pace with the temperature curve unless the heart or lungs are singly affected in a local way.

Scott(1) recognizes four definite types based on clinical behavior: 1. Rapid course. This group of cases either begin explosively or progress more gradually to an alarming state within a few days. Some of these cases do recover but the majority of them die within a few days. Many of his cases in this group did not survive more than forty-eight hours.

2. Plateau course. In this group the patient soon stabilizes at a fixed level, showing slight changes from day to day. The septic swinging type of temperature is the rule. It was his opinion that in these cases there was a considerable period of time, often several weeks, when the forces of recovery on the one hand and the forces of progression on the other seem to be nearly balanced. The case may lose ground slowly, remain practically stationary, or gradually recover. It was his conclusion that in this group a little help given to the natural defenses of the body would make for recovery.

3. The third group comprises those cases of transient septicemia, a type of blood stream infection more often due to septic abortion. It may last only three to four days to one week.

4. This fourth and last group comprises the cases of terminal sepsis—a terminal invasion that occurs in many debilitating diseases.

Many toxic symptoms may be observed early in the plateau course group, chiefly delirium, or apathy, marked prostration, and abdominal distention. Osler was of the opinion that delirium was more constant and appeared earlier in the streptococcic infection than in staphylococcic cases.

Physical examination seldom adds much to the final conclusion except by way of exclusion of other conditions. Much has been said about hemorrhagic petechiae. They perhaps are more common in streptococcic infection, and usually are more abundant on the trunk. They may appear first in the bend of the elbow, the axillary folds or the interdigital spaces. Splenic enlargement is a well known finding, but its absence or presence neither adds to nor detracts from the importance of the particular case under study.

In cases due to local cellulitis, the primary lesion may offer some hint of the invasiveness of the infection. Clinical experience develops for one the picture of this kind of lesion that is characterized by a diffuse tissue inflammation without definite outline and by lack of a protective barrier. The lesion is unusually painful.

Lymphangitis is a helpful finding. Lyons(2) maintains that the diagnosis of lymphangitis can be made in the absence of the familiar "red streaks" by the demonstration of tenderness along lymphatic pathways and induration of the lymphatics. He further states that this lymphatic and peri-lymphatic thickening is more easily appreciated if some type of grease is applied to the skin to reduce tactile friction.

The laboratory is an invaluable aid in diagnosis and treatment. As soon as a blood stream infection is suspected, blood culture should be performed. It seems to be a clinical fact that a positive culture is more probable after the chill. Large amounts of blood, 10 to 20 cc., are advisable. Friesner reports a higher percent of positive cultures when 40 to 50 cc. of blood are used for each culture. It is well to hold cultures as long as five to seven days, because a few will become positive quite late. Counting of colonies per plate at fixed periods gives some idea of the degree of infection. It also offers some help in prognosis if daily culture plates are made. A single positive culture is not sufficient for certain diagnosis unless there develop in the cases, metastatic lesions that might be considered pathognomonic.

The study of the cellular elements gives a great deal of helpful information. Anemia is common. The degree and type of anemia can be determined by laboratory means. The total white cell count is of some help. Polymorphonuclear leucocytosis of moderate degree is the rule, but the leucocyte count does not always parallel with the severity of the infection. Cadham[3] has observed in a large series of cases of septicemia that an increasing leucocytosis paralleled a low opsonic index and a fall in complement. In other words, the weakness of the body defenses, which allows an extension of the invasion of pyogenic organisms, is off-set, in part at least, by the over-production of leucocytes. A sharp decrease in the total count in the face of profound toxemia is a bad sign.

The Schilling hemogram, or some other kind of hemography, is probably of more value in this condition than in any other in the field of clinical medicine. It is important not only from the standpoint of hemogramic diagnosis but also from the standpoint of hemogramic prognosis. It is outside the province of this paper to go into the description and interpretation of hemograms. However, relating a few of the pertinent facts that may have a practical bearing on our problem should be permissable. The normal blood contains 68 neutrophiles in each 100 white cells of all types. No myelocytes nor juvenile cells are present normally. Four stab forms and 64 segmented constitute the total neutrophile count. Farley et al[4] have designated these cells as non-filament and filament forms respectively. Definite increase in the non-filaments is designated as a "left shift." For practical purposes various ratios may be used. The non-filament filament ratio is simple and instructive. For example, if there were 64 filament cells and 4 non-filament cells, the index would be 16. Values from 16 to 10 would show slight left shift, from 10 to 4 moderate grade of shift, and below 4 marked left shift. However, the whole blood picture must be taken into account and a study of toxic cellular phenomenon made if full value of the hemogram is to be obtained.

The treatment of a given case of septicemia is an individual problem, but in the main certain broad principles can be laid down for all cases. We propose to set forth a program that we have used in a limited number of cases, with fair success. This program may be listed under the following headings:

I. Prophylaxis
  a. Medical treatment
  b. Surgical treatment
  c. Roentgen therapy

II. Therapeutic treatment
  a. Blood transfusion
  b. Transfusion of immunized blood
    1. Non-specific immunized blood
    2. Immunized blood or serum from a donor who would possess some immunity by virtue of the fact that he had recovered from a like infection.
    3. Specifically immunized blood.
  c. Drugs

For the sake of brevity we shall discuss prophylaxis in general terms, and will emphasize only what seems to be worth while procedure. The treatment by necessity is both surgical and medical. Futhermore, the surgical treatment often places upon the surgeon a tremendous responsibility. For instance, in the case of a complicated mastoid infection some of the following questions will come up: (1) In cases when thrombosis of the sigmoid sinus is complete, should the jugular vein be ligated? (2) When there is complete thrombosis of the sinus, should all the clot be removed to secure free bleeding? These and many other questions will come up which only can be handled by an experienced and well trained surgical attendant. These highly technical surgical questions are purposely presented in order that sharper attention may be directed to lesions that appear simpler but are just as important. In any septic lesion the broad principle of securing adequate and properly timed drainage should be used. There is no doubt that many cases of septicemia are aborted, and that many active cases clear up as a result of satisfactory evacuation.

It would be impertinence on the author's part to offer advice on the proper management of septic lesions generally, but he will make so bold as to say that the treatment of superficial local lesions might be handled to the best advantage of the patient by the medical attendant with the cooperation of the radiologist and the dermatologist. Brenamann called attention to this conclusion years ago when he implied that the management of acute non-tuberculous adenitis was not surgical. It was his practice to carry on conservative treatment until softening was so far advanced that only a slight prick with a sharp scalpel through the thinned central structures was all that was needed for evacuation. John E. Summers preached the same gospel in the care of local infections, especially the superficial lesions of the face and extremities, and more particularly of the fingers. Ochsner reports unusually good results in the treatment of local septic processes using the principle which has been called by some, the principle of "scientific neglect." In a recent article Ayres[5] adds much to support this contention, in the treatment of furuncles and carbuncles. After studying a large series of cases and tabulating five hundred questionnaires on the treatment of these conditions, by representative surgeons and dermatologists, he was able to draw these conclusions: (1) The dermatologists tend toward conservatism in the treatment of carbuncles, whereas the surgeons are more inclined to use radical measures. Both, however, were conservative in treating the furuncle type of lesion about the face. (2) The duration of radical treatment was twice as long as under conservative management. (3) The mortality from carbuncles is low in both groups but it is more than three times as great under surgical as under dermatologic treatment. In any event the proper regard for the local protective barrier that nature sets up around the local septic process must always be maintained and the ideal in surgical treatment will be to preserve this first line defense by timely drainage with the least possible trauma, and the reverent belief that opening of new lymph and blood channels is extremely dangerous. What has just been said practically embodies the full treatment of septicemia from a prophylactic standpoint.

There is sufficient evidence to support the belief that many vicious lesions are aborted and septicemia prevented by the timely and judicious use of roentgen therapy in pyogenic lesions. Convalescent and immune serum in such diseases as scarlet fever surely lessens the number of cases of blood stream invasions that one might otherwise see. Evidence continues to point to the fact that sulfanilamide and related products have a favorable influence on such diseases as erysipelas, septic sore throat, and scarlet fever and, hence, become a weapon against septicemia. Long(6) goes as far as to say that it may be used as a prophylactic in times of epidemic outbreak, against hemolytic streptococcal infections. So by way of concluding this chapter, the author would like to impress upon you the fact that every local infection and certain general infections are potential cases of septicemia, and the book of septicemia is too often closed by the nurse's record, "respiration ceased." This is a command for clinical diligence.

In the full blown case of septicemia, it has been our practice to resort to early blood transfusion regardless of the type of organism. Blood transfusion is no longer a dramatic feat, nor should its use be held up until the fatal stage of the disease is at hand. The majority of investigators are of the opinion that transfusions are usually helpful in streptococcic and staphylococcic septicemia. Even the skeptic resorts to an occasional transfusion. When the cardiac reserve is impaired then the circulation may be seriously burdened by the mechanical overload of transfusion. This offers about the only serious contraindication. If this condition prevails, the giving of serum is advised. In the real late case, transfusion becomes a medical gesture for the family, and probably has done much to bring some discredit to the practice. Our knowledge of the full mechanism of immunity is far from complete, but it is generally accepted that transfused blood may help in the following manner:

1. It counteracts the effects of the anemia which is so often a result of septicemia. Almost any illness may benefit from the filling of depleted blood vessels and additional O_2 carried by new hemoglobin.

2. It supplies the patient with fresh leucycytes for the elaboration of bactericidal substances thus widening the patient's immunologic response.

3. It gives a supply of natural bactericidal and opsonizing principles. Bacon makes the following statement: "One gains the impression that raw material for the manufacture of immunity has been supplied and that after it has been processed in the cellular chemical factory of the body, increased immunity appears." Furthermore, Ward and Lyons(7) are of the opinion that the body can destroy gram-positive organisms in only one way: by phagocytosis and intracellular digestion. They have presented evidence that immunity is correlated with the presence in the animal of specific opsonizing antibody against the virulent variants.

4. Okamoto has shown that the recipient's serum following transfusion contains increased agglutinins and opsonins against infection.

5. In most cases of septicemia complement is greatly reduced, and hence it is supplied by transfusion.

It might add to the clarity of the discussion to define complement. It is a thermolabile enzyme-like colloid present in the serum of all warm blooded animals. It has the ability to combine with sensitized cells and bring about their lysis under suitable conditions. It plays a great role in the activity of immune opsonins, and this activity may be affected by any normal serum containing complement. Cadham(3) has proven that small amounts of normal serum, as little as ¼ of 1 per cent, will activate blood deficient in complement, both in vitro and vivo. This reactivation is immediate and lasts, as a rule, two to three days.

We feel that the best result may be obtained by giving small transfusions of 200 to 250 cc. every two or three days. This is continued until a favorable turn in the case takes place, or until special immune types of donors are available or can be prepared.

The use of non-specific immunized blood was recommended in 1919 by Wright. It was given further impetus by the work of Colebrook and Storer⁽⁸⁾. More recently Crocker et al⁽⁹⁾ have reported quite favorable results with this procedure. This method is carried out by giving 50 million killed typhoid organisms intravenously. Because of the sharp symptoms that might ensue, it is necessary that the donor be put to bed. In the event that the first injection does not produce the reaction within one hour, a second injection of 25 million organisms is given. This reaction is accompanied by a sharp leucocytosis with left shift, and generally reaches the peak in seven to eight hours. The blood is drawn at this time and may be given whenever the operator elects. If the same donor is to be used again, it should be remembered that the hematologic reaction returns to normal in two to three days.

It has been demonstrated repeatedly that human convalescent serum is valuable for passive immunization in many diseases, particularly scarlet fever. Due to the fact that severe streptococcic infection is sporadic, the practicability of using convalescent serum of this type is not very great. In 1934 Baum(10)(11) made use of serum recovered from donors who had suffered from streptococcal infections, chiefly scarlet fever, in the treatment of clinically dissimilar infections of streptococcic etiology, and suggested a method of selection of high titer serums for therapeutic use in such instances. Thalhimer and Levinson(12) reported in 1935 their experience with the use of pooled convalescent scarlet fever serum in 122 patients severely ill with a variety of streptococcic infections. The mortality rate for the entire group was only 19%. They attributed this satisfactory result to the therapeutic effectiveness of the serum. In some cases that did not respond promptly to the serum, they supplemented the treatment by whole blood transfusions from donors who had recently recovered from scarlet fever. They do not believe agglutinin titer of a serum is a true index of its therapeutic potency. On the other hand, Baum(10)(11) maintains that one is not justified in the use of pooled serum when a select serum of high titer can be given. He and his co-workers have found that the presence of opsonizing antibody closely parallels that of the agglutinin. By way of conclusion, he strongly urges a therapeutic trial of the method, allowing the result to demonstrate whether or not it is of value. The process of serum preparation may be obtained from many sources and will not be given here. We believe that in isolated instances the blood may be drawn in tall cylinder graduates, the sterility of which can be so easily controlled that the addition of preservative is not necessary. 250 cc. of blood will yield about 110 to 115 cc. of serum. The dosage depends upon the severity of the case. In desperate cases 100 cc. is recommended dosage for the first twenty-four hours. Human serum produces no foreign protein reaction or sensitization, so it may be given intravenously as freely as indicated.

There are many reports in the literature on the use of specifically immunized blood transfusions. The majority of the workers look upon their results with satisfaction. From a theoretical standpoint this method offers the possibility of passive transfer of specific antibodies in addition to whatever value may be derived from the giving of whole blood. It has been our practice to make a vaccine from the first growth of organisms. The compatible donor (or donors) is injected daily with increasing amounts of this vaccine. It is believed that in the case of staphylococcus injections, the value of the immune body content of the blood can be augmented with the toxoid. In the case of streptococcic infections, protective substances could be developed against the bacterial filtrate. Blood may be drawn at the end of ten days, for use. This is a serious drawback to the method because the case may be lost before the donor is prepared. It is interesting to note, however, that 60% of cases reviewed by the author lived longer than fifteen days. We believe that this method will have its greatest value in the treatment of staphylococcic infections.

DRUG TREATMENT

Various drugs, especially chemotherapeutic agents, have been advocated and the literature reveals marked enthusiasm by some of these advocates. But in practically every instance these different substances have fallen into the discard. We have used metaphen, mercurochrome, neoarsphenamin, genetian violet, Pregl's I and quinine, with uncertain results. By way of digression, at this point the author would like to add the same conclusion to the use of bacteriophages. This is particularly true in the staphylococcal infections, where the use of staphylo-lysate may prove effective, and should be used.

In the past several months sulfanilamide and related substances have been brought forth as potent chemotherapeutic agents in the treatment of the beta group of strepticoccal hemolytic infections. The rapidly accumulating experience of very fine investigators lends support to the belief that this drug is the most valuable weapon that we have against streptococcal septicemia. The exact effect of this drug is not clearly understood. There is no general opinion that it acts as a bacteriostatic or bactericidal agent in vivo. Colebrook et al[12] maintain that following the administration of sulfanilamide to man or animals, their blood is bactericidal to hemolytic streptococci. The phenomenon of phagocytosis has been carefully studied, and it has been proven that progressively increasing phagocytosis; chiefly by the polymorphonuclear leucocytes, takes place. Long and his associates are of the opinion that sulfanilamide brings about a change in the streptococci which renders them susceptible to phagocytosis. This change is not instantaneous but requires several hours, which suggests the possibility of a union between organism and chemical by which a marked change in the metabolism of the streptococcus is brought about. Recently Osgood[14] has done some very arresting experiments with sulfanilamide, and from his results he concludes that the action of this drug is to neutralize or destroy the toxins of the beta hemolytic streptococcus, and thus bring about indirectly a favorable clinical effect. He contends that this neutralization effect is somewhat analogous to the action of antitoxin in diphtheria.

In the administration of this drug we have followed closely the recommendation of Long and his associates[6]. They maintain that it is desirable to reach a high blood level of the drug rapidly, the optimum being 10 mg. per cent in four hours. On the other hand Osgood[14] contends a concentration of 1:100,000 should be effective clinically. Long believes that the optimum level can be attained in adults weighing 100 pounds or more, by giving an initial dose of 10 to 16 five-grain tablets. This first dose is followed by 3 five-grain tablets every four to six hours. Accumulating experience leads one to the conclusion that 60 grains daily, after full saturation the first 24 to 36 hours, will effect the desired result. When it becomes necessary or when it seems more desirable to give the drug parenterally, they recommend an 0.8 per cent solution by hypodermoclysis. Of this solution, they consider 700 cc. the initial amount, followed by 500 cc. at eight-hour periods, as adequate dosage. It is now believed that the effective principle of prontosil is sulfanilamide, which is derived by a reduction process that takes place in the body. Recent investigation, however, tends to show that this may not be entirely true. Therefore the two previously mentioned substances should satisfy the clinical needs in a case of septicemia. The various side reactions of this drug are becoming better understood and no doubt new types of reaction will yet develop, but all of this deterrent evidence should not make one hesitate in making use of this valuable drug early in the case.

By way of conclusion, the author wishes to emphasize the need of careful study in every case. In this way, the better therapy can be applied. General management must not be overlooked. The case of septicemia requires a broad medical program.

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DOG TALK

A man sitting in the park with his dog fell into conversation with a dear old lady, who eventually asked him what breed the dog was.

"Spaniel," he said.

"My!" said the old lady, "isn't it a good thing he isn't over there now?"—*Windsor Star.*

THE OPERATIVE TREATMENT OF EMPYEMA WITH GAUZE PACKING

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In presenting this method of treatment one must approach this assembly with great timidity. Many of you remember years ago, the frequency of the discussions held on appendicitis, and how the seriousness of the disease was pointed out at practically every meeting of physicians and surgeons. Just as important should the treatment of empyema and the seriousness of this disease be brought to the attention of the profession.

Many of you may also recall the high mortality in empyema during the World War when an early open thoracotomy was the accepted treatment, and how it was reduced when the empyema commission substituted frequent pleural taps before an individual was subjected to an open operation. Since then we have learned much in the treatment of this disease as to the time and type of operation indicated. Various methods of open and closed drainage have been tried and we have come to the conclusion that one must wait until thick pus and adhesions have formed before any operative procedure can be performed with safety.

For several years before adopting the Connor's method of pleural packing for an empyema I employed the various methods of tube drainage. In most instances the pleural cavity was irrigated at frequent intervals with some form of solution, usually Dakin's or saline. Dressings were changed frequently which were a source of discomfort to the patient, and very trying to me or to the other surgical dresser. Pus and fibrin continued to drain for several weeks, and it was sometimes a month or two before a clean pleural cavity was obtained.

It has been five years since I abandoned the closed and opened tube drainage and have followed the open drainage with gauze packing of the pleural cavity with most gratifying results. At a glance this procedure seems radical and too extensive and I am fully aware that unfavorable criticism will come from those who have not employed this method or from those who have not seen it used.

In employing this method of treatment one notices many distinct advantages over the tube drainage method as, for example, the ease of handling the patient, its economy, its surgical condition, and its lessened hospital stay.

Before applying this procedure preliminary treatment is important and necessary. I believe that the operation should be postponed until the condition of the patient has been improved, and until the pulse and temperature are in normal limits. This can be accomplished by daily pleural aspirations, by high caloric feedings, forcing fluids by mouth and by clysis, by repeated blood transfusions, and by allowing the subsidance of any possible underlying pulmonary infection.

OPERATIVE PROCEDURE

Connor's technique of rib resection with packing may be done under local or general anesthesia. The patient lies on the unaffected side, with the chest resting upon a pillow, the arm of the affected side being drawn up over the head. If the empyema is localized the incision is made at the dependent site of the focus, otherwise a five inch incision is made along the eighth interspace in the subscapular region. Three inches of the eighth rib is resected subperiostally. The intercostal muscles and vessels are removed en masse after being ligated for a distance equaling that of the ribs resected.

A small incision is made into the pleural cavity. The opening is gradually enlarged until it admits the tip of the aspirating apparatus. As much pus as possible is aspirated and the pleura is opened widely. At this time the patient coughs violently and experiences dyspnea, but this may be controlled by closing manually with gauze sponges the opening into the pleural cavity. The large masses of fibrin present are removed under vision with sponge forceps. In packing the pleural cavity plain gauze is used. With long dressing forceps it is introduced first to the apex of the cavity and is packed with fairly firm pressure in this direction and to the sulcus formed by the thoracic wall and the lung. More packing is introduced with the forceps until the cavity is completely filled. The skin wound is laid open wide by packing and a dry dressing is placed over it, held with adhesive tie-strappings which do not extend beyond the mid-line. Firm packing in the pleural cavity against the pericardia may cause embarrassment of the heart and acceleration of the pulse, which may be prevented by light packing.

POSTOPERATIVE PROCEDURE

As soon as the patient is brought back to bed he is laid on his affected side in a Fowler's position. A venoclysis of dextrose solution 5% in normal saline is given and morphine sulphate by hypodermic for pain and restlessness.

The outside dressings are changed as frequently as they become saturated with pus or fluid. A high caloric diet is ordered, forced fluids by clysis and by mouth, and if necessary, blood transfusion. On the third post operative day the gauze packing is removed. The thoracotomy opening on the outside is covered with dry gauze. The patient is allowed to be up as early as possible, usually on the third postoperative day, and is asked to cough frequently and vigorously in order to expand the lung. The pleural cavity is found to be clean after the removal of the packing and the lung expands freely. Hereafter rapid improvement takes place and most patients are ready to be discharged from the hospital on the sixth or seventh postoperative day and may come to the office for necessary dressings. Usually the thoracotomy wound is healed by the third week and by the fourth week patients may attend their routine duties.

Since 1932 there have been twenty cases operated upon with no deaths. Seventeen patients were children and three were adults. Eighteen occurred following lobar pneumonia; one following a peritonitis from a perforated gangrenous appendix; and one following a subdiaphragmatic abscess from a perforated duodenal ulcer. Bacteriologic examinations were made of all pus obtained. Sixteen showed pneumococcus; one streptococcus; one staphylococcus; and two colon bacillus. The packing was removed in all by the third postoperative day. Eighteen were up on the third postoperative day, one on the fourth, and one on the sixth. Nineteen were discharged from the hospital on the sixth or seventh postoperative day and one on the tenth postoperative day. Seventeen were discharged as well and wound healed in one month; three in six weeks. None have returned for recurrence of symptoms or complications.

CONCLUSION

1. I believe the packing method for the treatment of empyema is the best procedure in our hands today.

2. It gives adequate exposure under which the cavity may be cleansed by direct vision.

3. It holds the lung at rest following operation.

4. Fibropurulent material may be removed by pressure of the gauze.

5. It removes the pyogenic membrane and allows the lung to expand more easily.

6. It reduces to a minimum the presence of foreign bodies in the pleural cavity and obviates the use of irrigating fluids.

7. It economizes in labor, material and dressings.

8. It minimizes hospital stay.

9. It may be employed regardless of the bacteriology found.

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THE SUMMER-TIME USE OF MEAD'S OLEUM PERCOMORPHUM

During the hot weather, when fat tolerance is lowest, many physicians have found it a successful practice to transfer cod liver oil patients to Mead's Oleum Percomorphum.

Due to its negligible oil content and its small dosage, this product does not upset the digestion, so that even the most squeamish patient can "stomach" it without protest.

There are at least two facts that strongly indicate the reasonableness of the above suggestion: (1) In prematures, to whom cod liver oil cannot be given in sufficient dosage without serious digestive upset, Mead's Oleum Percomorphum is the antiricketic agent of choice. (2) In Florida, Arizona and New Mexico, where an unusually high percentage of sunshine prevails at all seasons, Mead's Oleum Percomorphum continues increasingly in demand, as physicians realize that sunshine alone does not always prevent or cure rickets.

Mead Johnson & Company, Evansville, Indiana, invite you to send for samples of Mead's Oleum Percomorphum for clinical use during the summer months to replace cod liver oil.

TUMORS OF THE NECK: THEIR DIAGNOSIS AND TREATMENT

Part III: Cervical Cysts and Fistulas

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Cystic intumescences and their draining sinuses constitute an interesting group of cervical tumors, of which the thyroglossal, branchiogenic and lymphogenic varieties are most frequently encountered.

Thyroglossal cysts and fistulas arise from sequestrated epithelial rests which have been torn from the floor of the mouth by the descending thyroid anlage and deposited along the thyroglossal tract. Being lined with pharyngeal mucosa, these vestigial rests may be converted into simple retention cysts or troublesome fistulas.

As a rule these cysts are asymptomatic. Occasionally, however, they may be so situated that they press on the larynx and produce a dry, harrassing cough. Infrequently they become infected, in which event pain, tenderness and a diffuse cellulitis result. The cysts are usually soft, spongy and compressible but at times they may become so distended with secretions that they are mistaken for solid tumors. Spontaneous rupture or incisional drainage of a cyst frequently results in a chronic fistula from which a thick, mucinous discharge escapes. These fistulas are usually incomplete and drain externally but in rare cases the internal orifice may open at the foramen cecum. Fully 99% of all thyroglossal cysts and their sinus tracts are located in the midline of the neck, anywhere from the foramen cecum to the suprasternal notch. Because they are intimately attached to the hyoid bone and the foramen cecum, these tumors always move upward on deglutition or extension of the tongue. This important diagnostic point distinguishes them from other median placed tumors such as inclusion cysts, enlarged lymph nodes and ranulae. It is necessary to differentiate them also from adenomas of the pyramidal lobe of the thyroid gland. Several cases have been reported in which myxedema has followed the removal of a supposed thyroglossal cyst, when in reality an ectopic thyroid gland had been completely excised. The roentgenographic visualization of the cyst and its sinus tract by means of contrast media is very informative Fig. 1.

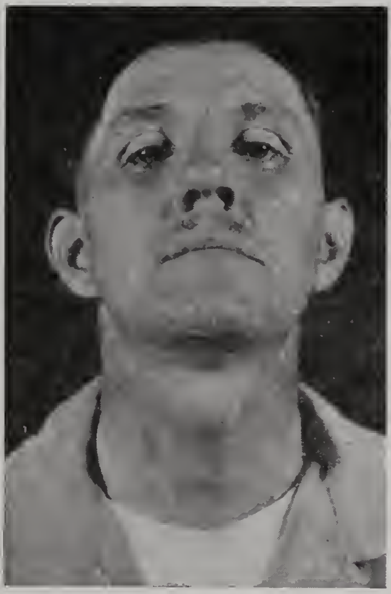

FIG. 1.
A thyroglossal duct cyst occurring in an adult.

Simple incision and drainage and even enucleation of these cystic tumors is seldom curative. Effective therapy demands that every vestige of the thyroglossal tract be removed. This can best be accomplished by excising the cyst, resecting the central segment of the hyoid bone and 'coring out' the suprahyoid segment of the thyroglossal tract up to but not including the foramen cecum. Care should be taken not to enter the oral cavity as this merely invites infection. Thyroglossal fistulas require the same extensive operation as their precursors, the cysts. The introduction of methylene blue into the sinus tract facilitates complete extirpation. Since employing this extensive operation, we have had no recurrences.

Branchial cysts and fistulas have their origin in deep-seated atavistic epithelial rests which persist after obliteration of the cervical sinus and the second pharyngeal pouch. They usually appear at birth but occasionally do not manifest themselves until adult life.

Uncomplicated branchial cysts are asymptomatic unless they produce pressure phenomena or become infected. They usually grow slowly, requiring from 18 to 24 months to attain sufficient size to cause the patient any concern. Inflammatory reactions may result in sudden growth complicated by a cervical cellulitis.

Branchial cysts occupy a constant anatomical position, recognition of which facilitates their diagnosis. They lie just beneath the sternocleidomastoid muscle at the level of the hyoid bone, and as they enlarge, they protrude around the anterior border of this muscle, forming distinctly visible tumors. If unusually large, they may occupy both the anterior and posterior cervical triangles. Cysts arising from the entodermal portion of the branchial anlage are usually small and intimately attached to the deep vessels and nerves of the neck, and they may bulge into the oral cavity near the tonsillar fossa.

Branchiogenic cysts must be differentiated from thyroglossal cysts, hygromas, infective and malignant lymphadenopathies, lipomas, neurofibromas and hemangiomas, for although they are usually fluctuant, they may closely mimic solid tumors. The simplest and perhaps most infallible diagnostic procedure consists of making a microscopic and bacteriologic study of the aspirated contents. No untoward complications, such as secondary pyogenic infections, have resulted from this procedure. The aspirated fliud may vary from a thin, turbid, brownish fluid to a thick creamy material that resembles a caseating tuberculous lymph node. The presence of lipoid bodies and cholesterol crystals characterizes branchial cysts. The fluid is usually sterile. Accurate radiographic visualization can be accomplished by introducing contrast substances into the aspirated cystic cavity or its sinus tract.** Fig. 3. If the cyst extends toward the hypopharynx, the diagnosis is obvious.

Conservative measures such as repeated aspirations, incision and drainage, partial extirpation and irradiation, are seldom curative. If the cyst is small and superficially situated, its secreting mucous membrane may be destroyed by first decompressing the cyst and then introducing some sclerosing fluid such as sodium morrhuate or proliferol. Escharotics are definitely contraindicated if the cyst is large or if it is intimately associated with the large blood vessels of the neck. We have seen instances of severe extensive cervical cellulitis and thrombophlebitis of the internal jugular vein following the injudicious use of these chemical irritants.

Complete surgical excision is the most effective therapeutic measure and is never complicated by recurrences. As the majority of branchial cysts and fistulas are superficial, in that they lie just beneath the sternocleidomastoid muscle, complete removal is easily accomplished. If the cyst has been inflamed, it may be so adherent to the internal jugular vein that it becomes necessary to resect this vessel. Unfortunately, the deep-seated cysts insinuate themselves between the internal and external carotid arteries and meticulous sharp dissection is required to separate them from these pulsating structures. To accidentally rupture a cyst during dissection is to defeat the purpose of the operation, for it is practically impossible to enucleate a collapsed cyst. If such an accident does occur, the cystic cavity should be firmly packed with gauze, thus placing the cyst wall under slight tension and making complete extirpation possible.

Cystic hygroma. Occasionally, developmental defects of the lymphovascular system produce

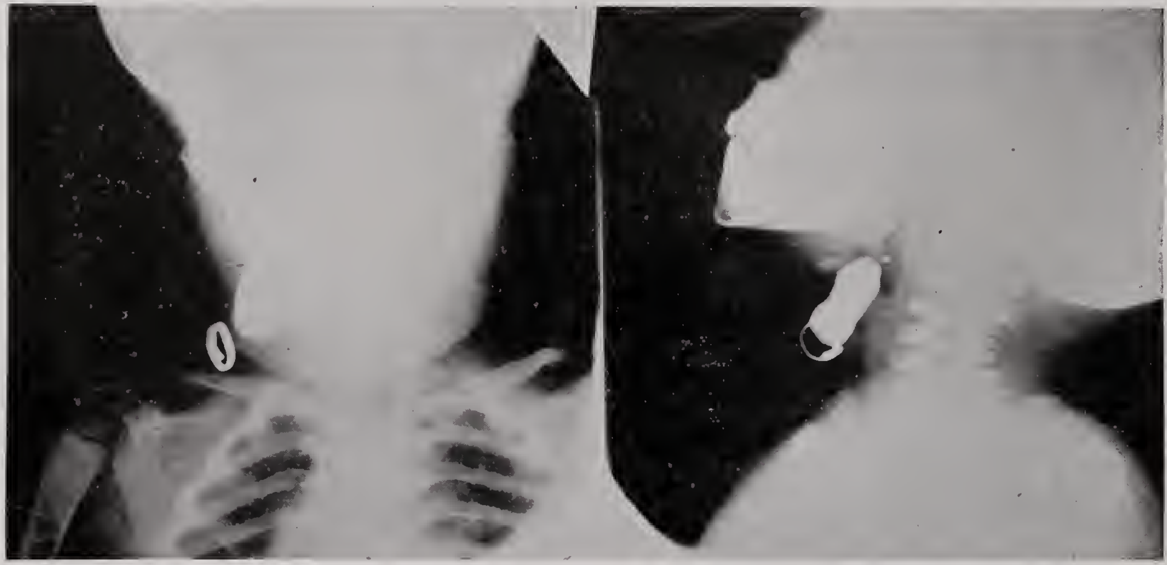

FIG. 2-A. FIG. 2-B.

Fig. 2-A—Anterior view of branchial cyst distended with lipoiodine. Observe its lateral position.
Fig. 2-B—Side view demonstrates the cyst extending to the hypopharynx.

**Thorium dioxide sol—Heyden Chemical Co.
Lipiodine—Ciba Co.

large cervical tumors. Congenital in nature, they are usually observed at birth or shortly thereafter. A soft, semi-fluctuant, elliptical mass appears just above the clavicle at the outer border of the sternocleidomastoid muscle. The rate of growth is usually slow but progressive except when stimulated by infection or trauma. The tumor seldom produces symptoms in spite of the fact that during its insidious but expansile growth it may displace many important structures of the neck, axilla and mediastinum. Cystic hygromas do not involve the skin, a point which tends to differentiate them from the majority of kindred lymphangiomata. They usually lie behind the cervical fascia and are fairly well delimited, but occasionally, as in the multilocular type, the parent cyst may send pseudopodic ramifications into the deeper cervical regions, and all too frequently into the axillary and mediastinal areas. In the communicating multilocular tumors, the fluid flows from one segment into the other, forming a compressible mass. This was typified by the patient in Fig. 3. Whenever she coughed, strained or sneezed, the cervical tumor increased in size. Pressure over the supraclavicular portion caused a pronounced enlargement of its axillary segment, while a simultaneous compression of both masses resulted in a complete disappearance of the tumor, indicating a mediastinal extension of the 'lymphocele.'

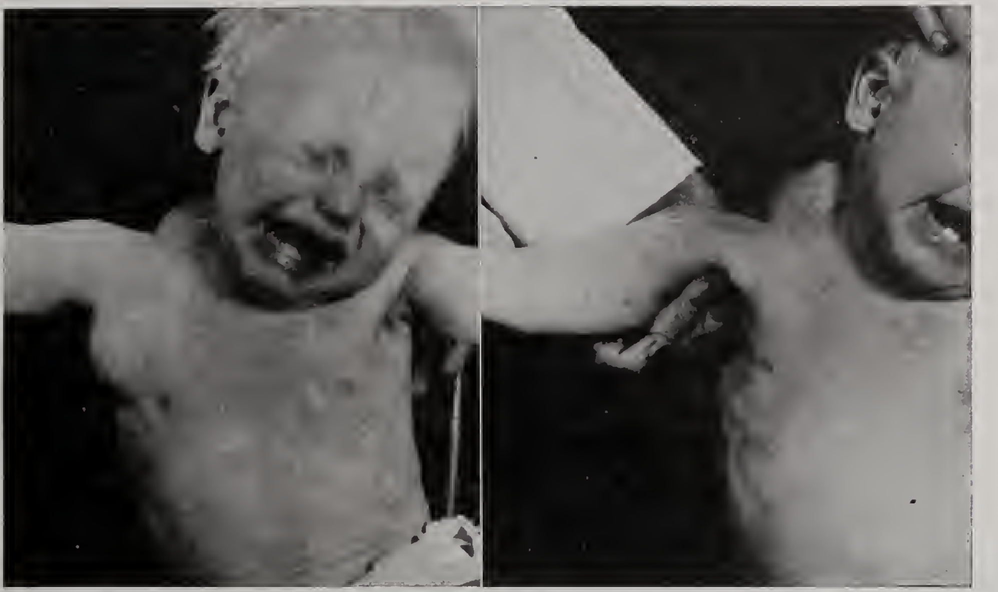

FIG. 3-A. FIG. 3-B.

Fig. 3-A—A large multilocular hygroma occupying the cervical and axillary spaces.
Fig. 3-B—Pressure on the axillary segment enlarges the supraclavicular loculi, thus indicating an extensive ramifying hygroma.

Cystic hygromas present a perplexing therapeutic problem. Complete excision is always curative but seldom achieved. The main body of the hygroma can readily be excised but the numerous ramifications, which are intimately associated with the vital structures of the neck and upper mediastinum, combined with the tendency of these delicate gossamer-like extensions to rupture, defy complete removal. The majority of hygromas are multilocular and are divided into communicating and isolated compartments. In our patient, the transparent thin-walled cyst was firmly adherent to the under surface of the sternocleidomastoid and pectoral muscles; it completely encased the scaleni muscles and was inseparably attached to the vagus nerve and carotid arteries. Extensions of the cyst had penetrated the upper thoracic cavity and were not only poorly defined but absolutely inaccessible. Several large loculi communicated with sister cysts in the axilla which were firmly adherent to the branchial plexus. During the tedious and exasperating dissection, the delicate cyst wall was ruptured many times, thus making complete excision impossible. In such instances, regeneration invariably takes place, unless restraining treatment is given. While hygroma are not radiosensitive, intense therapy will sometimes produce an obliterative fibrosis of the vestigial lymphatic structures and inhibit or minimize the number of recurrences.

Attempts to destroy the endothelial lining of these cysts with sclerosing substances have met with but little success. To be effective the irritating chemicals must be introduced into each of the small cysts and its contiguous lymphatic spaces, and in the multilocular, non-communicating type such a feat is impossible. If the sclerosing solutions are injected under the slightest pressure, the confining cyst wall is ruptured and the irritating medium extravasates into the cervical tissues. Several cases of fulminating cellulitis, ulceration and secondary infection have been observed following the use of such agents. In the small unilocular hygroma, such treatment may be effective. Experience dictates that the prognosis is always guarded for although these tumors are not malignant, they possess remarkable powers of regeneration and recurrences are common. The best results, which are none too pleasing, are obtained by the judicious combination of surgery and complementive irradiation; either used alone is seldom effective.

TUMORS OF THE NECK: THEIR DIAGNOSIS AND TREATMENT
PART IV. CERVICAL LIPOMAS, NEUROFIBROMAS, AND LYMPHOMAS

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CERVICAL LIPOMA

Lipomas occur frequently but are seldom interesting. Unusual size, rapidity of growth, pressure symptoms, or incorrect diagnosis usually account for the occasional attention which they receive. The following case is both interesting and instructive.

A boy, four years of age, entered the hospital complaining of a "lump in the neck." Two years previously his mother had accidentally discovered a small pea-sized nodule just above the left acromioclavicular articulation. During the past five months the tumor had exhibited an unusual rapidity of growth reaching the proportions shown in Figure I. Examination revealed a large, semifluctuant, encapsulated tumor situated in the subcutaneous tissues of the left anterior and posterior cervical triangles. It was soft, lobulated, movable, and painless. It did not transmit light and there was no associated regional adenopathy. X-ray examination showed a translucent tumor containing many fine trabeculations, consistent with a lipoma (Fig. I). A benign encapsulated lipoma was found at operation.

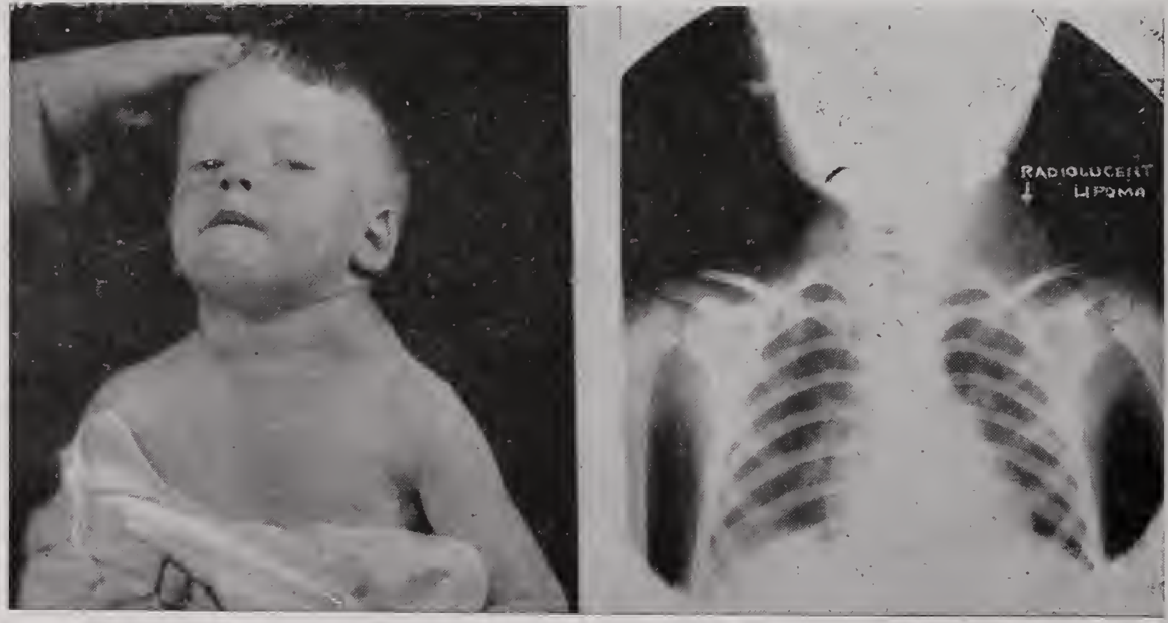


Fig. 1—A large cervical lipoma demonstrating their radiolucency

Lipomata produce characteristic radiological findings. They appear as encapsulated, radiolucent tumors which do not invade the regional tissues but displace them. The radiolucent matrix is traversed by a variable number of striae representing the fibrous tissue stroma. A cystic tumor containing fluid shows a homogeneously denser shadow. Likewise an aspirating needle would quickly differentiate between a lipoma and a cystic tumor containing fluid. Futhermore Burrows emphasizes that the skin overlying a lipoma has a lower temperature than that of the surrounding dermis.

Complete excision is the ideal treatment for lipoma. Difficulty in recognizing the delicate restraining capsule requires that the incision be carried out into normal tissues, beyond the confines of the tumor. If any of the fatty cells are left behind they form the nidus for a recurrent growth. The lackadasical and conservative excisions which are frequently done for a "simple lipoma" account for their surprising regenerations. Irradiation is generally considered to be of no value because of the highly differentiated nature of the neoplasm, although we have witnessed spontaneous regression of a large lipoma two months following x-ray therapy given at the request of the patient.

NEUROGENIC TUMORS

Like all other tissues of the body, nerves frequently undergo neoplastic transformation. Neurogenic tumors frequently occur in the neck as this region contains a compact maize of nerve trunks, nerve fibers, plexuses, and sympathetic ganglia.

Neurofibromas are most common. These essentially benign tumors arise from the epineurium, the perineurium, and the endoneurium, are fibrous in nature and usually do not contain reduplications of the nerve structure. They may be multiple or single and may arise from either the superficial or deep nerves. In the multiple form (neurofibromatosis, von Recklinghausen's disease) the nodules are usually distributed over the entire body. Our discussion is confined to the single, solitary lesion.

Strangely enough the diagnosis of neurofibroma is seldom made preoperatively as the paucity of symptoms precludes this. They seldom cause pain but do occasionally exert pressure on the trachea or esophagus. It is usually the undesirable cosmetic effects which cause the patient to seek advice. These solitary neoplasms usually arise from the deep cervical nerves and show gradual slow growth. They are firm, fixed, painless, and not tender. Because of the plexiform arrangement of the nerves one can seldom establish a relationship between the tumor and the involved nerve trunk. Even though the growth may arise from such important structures as the vagus or hypoglossal nerves it seldom interferes with their functional integrity. Pain referred along the nerve distribution occurs occasionally when sensory nerves are involved. Loss of function strongly suggests that a malignant transformation has taken place.

The serious nature of these tumors is seldom appreciated. They possess a tantalizing tendency to recur and the usual ineffectiveness of irradiation therapy merely adds to the realization of our helplessness. Heavy and protracted radiation therapy may infrequently control a neurosarcoma by converting it into an indolent mass of scar tissue according to Stewart. The technical difficulties encountered in their removal depend on the size, location, and nature of the mass. If the tumor arises from a small nerve, if it develops on a sensory nerve, or if it has undergone malignant transformation, then the entire nerve and tumor should both be removed. If, however, the neurofibroma arises from a motor nerve or a mixed nerve every attempt should be made to preserve the integrity of the nerve and merely an extracapsular enucleation of the tumor should be attempted. Unfortunately all problems are not quite so simple for frequently essential structures must be sacrificed in a heroic attempt to eradicate all of the diseased tissue. In Fig. 2 it was necessary to resect the right vagus and hypoglossal nerves, the right lobe of the thyroid gland, the submaxillary gland, and to ligate and excise both external and internal jugular veins and their associated lymphatics because of their intimate relationship to the large rapidly-growing neurofibroma.

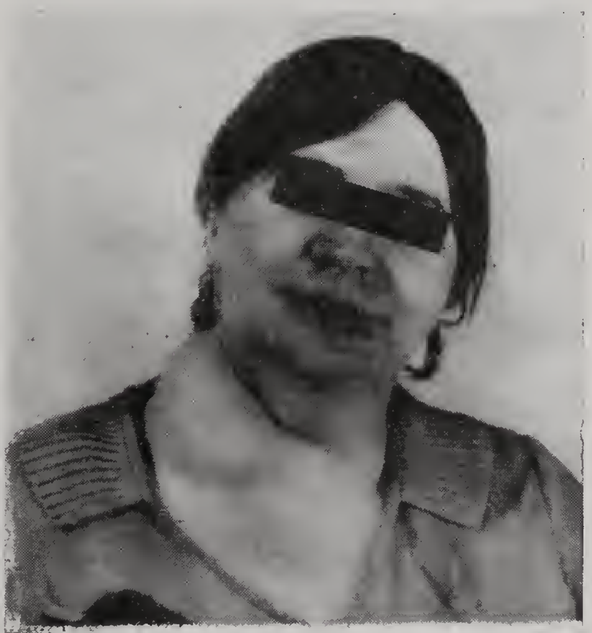


Fig. 2—A multilobulated neurofibroma

The most effective form of therapy, and this is none too promising, consists in preoperative irradiation to the point of skin tolerance followed by excision of the tumor and then postoperative irradiation into the naked wound. Such persistent efforts are frequently rewarded with pleasing remissions. This drastic treatment is not required if the neurofribroma is small and well delimited but in the large, deep-seated variety conservatism invariably propagates recurrences. Particularly is this true in the neurosarcomas and the sympathetic neuroblastoma, for these lesions are extremely malignant.

BRANCHIOGENIC CARCINOMA

While branchiogenic carcinomas are rather rare they must be mentioned while studying cervical neoplasms. Although the disease is highly malignant and usually terminates fatally, the physician is able to extend palliation to these most unfortunate individuals. Branchiogenic tumors occur much more frequently in men than in women. They appear high in the neck just below the angle of the jaw or near the aural portion of the sternomastoid muscle. Frequently the patient accidentally discovers a hard, small, painless, rapidly-growing nodule. It is seldom attached to the skin except in advanced cases and is usually intimately fused with the deep structures of the neck. Intermittent pain occurs as invasion progresses. The rapid proliferation of malignant cells combined with a limited blood supply produces central cystic degeneration with superficial ulceration. The neoplastic cells soon penetrate the confining capsule and invade the nasopharynx, pyriform sinus, cervical nodes, and the trachea. In eleven patients seen at the Cleveland Clinic (N. F. H.) only three of them had pulmonary metastases.

Neither irradiation nor surgery is effective in controlling the ravages of this disease. Portman feels, however, that x-ray treatment helps to minimize the pain even though it is not curative. Surgery has little more to offer. When seen, the neoplastic cells have already invaded contiguous structures so that complete excision is seldom accomplished. If surgery is to be employed it should be radical for this disease flaunts conservatism. The tumor mass, adjacent lymph glands, and contiguous muscles should be resected. In the vast majority of cases the internal jugular vein must be removed because of its intimate contact with the malignant growth. In advanced cases the tumor may extend between the external and internal carotid arteries and while ligation and excision of these vessels seems desirable, it is most unwise. An increased operative mortality and permanent hemaplegia frequently follow such practices.

The best results are obtained by combining surgical excision and complemental irradiation. After removing as much of the neoplastic tissue as possible the wound is packed open with iodoform gauze. The pack is removed within twenty-four hours, the skin flaps retracted, and several intensive treatments of roentgenotherapy are directed into the naked wound. Extremely large doses of irradiation can be administered by this method as the tolerance is not determined by the sensitivity of the skin flaps. After maximum irradiation has been given the skin flaps are approximated and subsequent irradiation therapy can be given when needed. This heroic treatment is only palliative but it keeps the patient comfortable and extends his life from one to three years. (Crile-Kearns).

MALIGNANT LYMPHOMAS

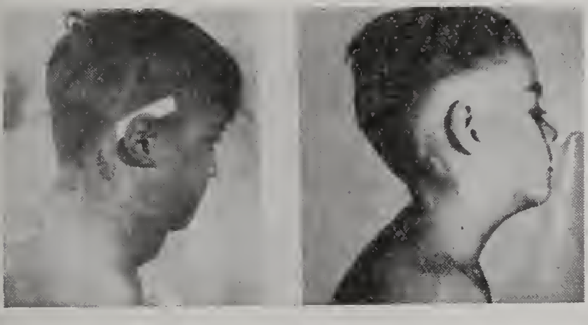
Brevity demands that we consider all malignant lymphogenic neoplasms such as Hodgkin's disease, lymphosarcoma, leukosarcoma, and leukemias as a group. While each has certain clinical and pathological characteristics they are all similar in that they are progressive, terminate fatally, and are strikingly radiosensitive. These lymphomas are prone to have multiple points of origin as they may arise from the lymphatic tissue in any part of the body. Due to the superficiality and accessibility of the cervical nodes they frequently present the first signs of the approaching malady.

A progressive, painless, nonsuppurative cervical adenopathy should always suggest the possibility of a malignant lymphoma. The lymphosarcomatous variety usually develop in the tonsils, adenoids, pharyngeal lymphatic tissue or in the cervical nodes. The involved glands grow very rapidly and are soft, movable, and spongy. The malignant process extends along the lymphatic channels to adjacent nodes which soon lose their identity and form an irregular fixed tumor. They have a tremendous power of growth for within six week's period they may increase from a pea-sized nodule to one the size of an orange. Metastasis occurs early and the course of the disease is short. In Hodgkin's disease the nodes are first small, firm, movable, and discrete. They grow slowly, finally merging with neighboring glands to form a hard, firm, nodular mass. A generalized lymphadenopathy soon appears. Roentgenograms often reveal large conglomerate masses of lymph nodes in the peribronchial and pretracheal areas.

An exact differential diagnosis is sometimes difficult to make. The blood picture will eventually differentiate the leukemias from the other lymphomas but even in the leukemic variety this may be indeterminate in the earlier stages. Hence it is frequently necessary to perform a biopsy of the enlarged glands and even then the pathologist is frequently at a loss to nicely interpret the bizarre morphological picture which he sees. It is very essential that a diseased lymph gland be removed in its entirety and not merely fragmented while doing the biopsy.

When once the diagnosis of a lymphogenic malignancy has been made the fate of the patient is sealed. A complete cure comes only as a gift from the Gods, remissions, recurrences and death being the usual sequelae. The physician, however, cannot passively commiserate with the patient but must make an honest attempt to effect palliation. Fortunately the highly malignant leukosarcomas and lymphosarcomas are very sensitive to irradiation. Large tumors seem to "melt away" under the influence of such therapy. Just as dramatic, however, as their disappearance, is their appearance elsewhere or regional recurrence. They possess unusual properties of growth and invasion. Cachexia, anemia, ascites, and loss of vitality are warnings of the approaching death even though no recurrent masses are present. The average duration of life is from one to six months after the disease is recognized.

Hodgkin's disease presents a more hopeful immediate outlook in that it grows more slowly but the fatal termination is essentially inevitable. These neoplastic masses respond to x-ray therapy and if consistent treatment is given the useful life of the patient can be extended from one to seven years. Fig. 3. General health is improved and symptoms due to pressure from enlarged nodes are relieved. A well localized Hodgkin's disease or lymphosarcoma warrants intensive roentgen therapy to the local lesion and regional lymphatics. Occasionally axillary, mediastinal and inguinal nodes are also treated. Disseminated or more advanced disease calls only for palliative therapy for relief of symptoms.


A Fig. 3 B
A. Cervical Hodgkins disease.
B. 19 mos. later—Showing results from intensive irradiation therapy.

Lymphoepitheliomas and transitional cell anaplastic malignancies of the faucial ring and pharynx commonly metastasize to cervical glands and may show the clinical picture and radiosensitivity of a malignant lymphoma. Differentiation is important and usually requires biopsy. The prognosis is not hopeless in the case of the anaplastic carcinoma when treated with intensive roentgen therapy approaching skin tolerance.

Before employing irradiation therapy a histological study of the tumor should be made. Its morphological confirmation furnishes information concerning its radiosensitivity and prognosis which is of value in directing treatment and in advising the patient and family. Without this information any therapy is empirical.

Surgery has little to offer in the treatment of malignant lymphomas, in fact it is contraindicated.

SUMMARY

1. Cervical lipomas occur rather frequently. Complete excision is curative.

2. Neurogenic tumors are difficult to diagnose and because they are attached to important structures their complete removal is sometimes difficult. Irradiation is a useful adjunct to surgery, particularly if the tumor has undergone a malignant transformation.

3. Branchiogenic carcinomas of the neck are very discouraging tumors to treat. Preoperative irradiation to the point of skin tolerance, radical surgical excision and postoperative irradiation into the open wound offer the best prognosis, which at the best is none too good.

4. Lymphosarcomas, leukosarcomas, Hodgkin's disease and the leukemias are all radiosensitive. Irradiation causes a regression in the size of the tumors and greatly benefits the general health of the patient. Unfortunately remissions are impending and unavoidable.

THIS ONE IS NEW, DOCTOR!

(Relayed by Mark Fullriede)

A young man whose first job was that of a reporter on a newspaper had trouble writing his stories. All his efforts seemed to find their way into the waste-basket.

One day the City Editor called him and said: "See here, you don't quite know what the public is interested in; you don't sense what news really is. For example, if a dog bites a man, that isn't news, but if a man bites a dog that's news.

The next day the reporter submitted what he believed to be a masterpiece—which it was and is—and the headline read like this:

"FIRE PLUG BREAKS—WETS DOG."

EARLY SYMPTOMS OF GLAUCOMA*

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A persistent increase in the intra-ocular tension of the eyeball is essential to the development of the condition commonly known as glaucoma. While glaucoma is indicative of an abnormal condition of the eye it is in reality, not so much a disease as it is a symptom complex, the chief feature of which is an increase in the intra-ocular pressure.

It occurs in the frequency of about one per cent of the cases seen in ophthalmic practice. It may develop at any age but is more frequently seen in middle life or later. Heredity seems to be a factor in the etiology of simple glaucoma.

It may be primary, in which there is no discoverable antecedent disease of the eyes. This form usually begins in one eye with later development in the second eye. Another form known as secondary glaucoma follows some disease or injury to the eye. This type is limited usually to one eye.

Another classification of glaucoma is made on the presence or absence of congestion of the globe, namely: congestive and non-congestive glaucoma. On account of the absence of dilated vessels the latter type is more insidious and more likely to be unrecognized until great damage to the optic nerve has taken place and marked loss of vision has resulted. Usually the condition is far advanced before the case is seen by an oculist. The accurate recognition of this type is of greatest importance for the general practitioner, the more so because in the early stage prompt and proper therapeutic procedures may save the sight, while a wrong diagnosis and improper treatment only hasten the progress toward a hopeless blindness.

Unfortunately we continue to have many cases which have been either unrecognized or incorrectly treated by the family physician or by an optician and which come to the ophthalmologist only when help is no longer possible.

Cases of Congestive Glaucoma are too frequently mistaken for iritis or iridocyclitis and are given atropine which has a particularly harmful effect on glaucoma.

Glaucoma simplex or non-congestive glaucoma, because it does not present external symptoms of inflammation is often diagnosed as cataract and the patient is advised to wait until the cataract is ripe. As a result of delay irreparable damage to the optic nerve is sure to follow.

The early signs and symptoms of glaucoma can be recognized if the physician is alert and if he is as careful and painstaking in the taking of the history as he would be in any other case of similar severity. The symptoms complained of by the patient are characterized by disturbances of sight. Often the patient states that the vision seems hazy and that there are colored rings about a light. Headache is a frequent symptom. These symptoms of haziness and colored rings are not diagnostic as they occur with other conditions in the eye. They occur as a result of any diffuse cloudiness of the media and are not confined to glaucoma. It is only when they persist together with the signs of abnormal increase in pressure that they become significant of glaucoma. The physician may be misled by the suggestion that stronger lenses are required for reading if the patient is in the presbyopic stage. This disturbance in the accommodation is due to swelling in the lens, as any increase in the size of the lens impedes the effort of accommodation for near.

In the non-congestive type the increase in tension sets in very gradually, so that no inflammatory phenomena are produced. The eye either looks quite normal externally or it may show greater prominence of the distended anterior ciliary veins surrounding the cornea. There may be a somewhat dilated and sluggish appearance of the pupil. The tension may be elevated or only slightly above normal.

Often at the first examination very little elevation is found. Repeated tests especially at different times of the day may be necessary before a successful demonstration can be made of a definite increase of pressure. At these times a slight smoky cloudiness of the cornea is sometimes present. Palpation with the fingers may give the impression of a normal tension. At such times an examination with the tonometer shows slight but certain elevation above the normal.

In the congestive type in addition to the symptoms of glaucoma simplex the patient complains of severe pain in the eye and neuralgic type headache. Early in the course of development there may be periods of remission when the patient is quite comfortable. Vision may be markedly lowered during the attacks with little disturbance of vision during the remissions as the glaucomatous state progresses these attacks become more frequent and severe. During these recurrences there is usually more cloudiness of the cornea, the anterior chamber is shallow, the pupil dilated and more or less fixed and the iris is pushed forward. There is marked congestion of the vessels surrounding the cornea. The field of vision on the nasal side may be restricted. On account of the haziness of the cornea examination of the optic disc is difficult. After subsidence of the acute attack there may be clearing of the cornea and an improvement in the central vision. At this time examination with the ophthalmoscope usually shows cupping of the disc. At first discovery of the above described symptoms complex, treatment should be promptly instituted and the patient kept under frequent observation.

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*Read before the Omaha Midwest Clinical Society, October, 1937.

Secondary glaucoma as was stated, may develop following operation, penetrating wounds, or some disease of the eye such as iridocyclitis. In all such cases if the eye becomes painful and shows signs of marked congestion secondary glaucoma should be considered and careful search made for persistent increased tension.

HYSTERIA VS. MALINGERING*

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Conscious, deliberate fabrication of symptoms, in whose reality the patient, himself, does not believe is malingering. But the unconscious assumption of symptoms, in whose reality the patient firmly believes, is hysteria.

Man is a dual creature: he is a social animal, but much more is he a selfish animal. He likes to boast of his social altruistic nature, but is more easily driven by his individual, selfish side. This makes for conflict, which everyone of us has to solve. And we do this, thanks to the ethical training received from childhood up, as a rule in a satisfactory manner often almost unaware of any conflict.

There are two great groups of instinctive drives that conflict with the ideal of the social man: the instinct of preservation of the species—sex with all it implies, and, what is of interest to us here, the instinct of self preservation. The commonest shapes which the instinct of self preservation assumes are fear and greed. Greed for possession, greed for power, fear of the loss of security, of want, of misery, and of hunger, more dreaded for our dear ones than ourselves.

Because these drives are so powerful they often prompt to acts that would be judged by society as shameful and there the conflict results. Most of us are able to solve this conflict in an adequate, socially acceptable way, but there are personalities who, for various reasons are not able to do so. Then psychoneurosis results.

A workman is injured seriously, he and his family are taken care of by compensation. He is improving, coming nearer and nearer to complete recovery. There are many factors that awaken fear in him: he knows that compensation will cease and he will have to resume work, friends warn him that he must not go back to work too soon, tell him of this one and that one that had been sent back by the doctors before he should have been; unless he is in an exceptionally favorable situation, for instance, if he is unskilled, he is doubtful if he will find work; he may distrust his ability to come back, and then there is always the subtle temptation which assails almost all of us more or less, i.e. to get something for nothing, to be able to live without the personal effort to make a living. If the man is an adequate personality, he will settle the conflict in a socially adequate way and get well. Or he may become a malingerer. Both the man who gets well and the malingerer know that soon the period of their disability will be over, and compensation will cease. The adequate personality will settle the psychological conflict in a socially adequate way and get well, but the malingerer will consciously make the most of any residual symptom, he might still have, and failing to have any, he will fake them. The difference between him and the honest person is that the latter has a social conscience which the malingerer has not. If, however, we have to deal with an inadequate personality type, a psychoneurosis will develop.

In the purest and simplest form the development of these psychoneuroses was to be seen in the war neuroses, the so-called shell-shock cases. Many a soldier who had been seriously wounded developed a true traumatic neurosis when he began to recover and the time approached when he would be sent back to the front.

An especially instructive case of war neurosis is that of a nineteen year old Australian private reported by Eder. On November 15th, he was sniping through a loop hole, when an enemy bullet knocked a piece off of the stock of his rifle. He continued at his post; five shots later another bullet struck the sand around the loophole. The right eye began to water. He shut the loophole and went away for an hour. He then returned, the eye being better, opened the loophole, posed his rifle, and then found that he could not see the sights on the rifle. There was obviously nothing to do but go to the doctor. The vision got rapidly worse, and in a few hours he had lost perception of light. "Let me add," says Eder, "that he was a lad of great, almost reckless courage, and of great independence of mind. This Australian," Eder goes on, " is a type with the gregarious instinct highly developed—his soldier's quality is strong. A bullet hits the stock of his rifle while sniping—the enemy has located him. It must be remembered that he is sniping, so that to go away would have been quite allowable. But he does not give up. Then another bullet comes along. The unconscious acting on behalf of the ego instinct, sets the eye watering, forcing him to relinquish his post. Then the soldier's instinct asserts itself, the eye ceases to water, and he returns to the loophole. But here the egocentric instinct, self preservation, reasserts itself, and the unconscious adopts a stronger attack. He is stricken blind in the shooting eye. He is now unable to carry out his conception of the soldier's duty, and without loss of self respect is able to retire, his safety guaranteed."

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*Read before the Omaha-Midwest Clinical Society, October, 1937.

Let us analyze the hysterical syndrome a little further. There is undoubtedly a purposive component in every case. The soldier wants to preserve his life, the workman who develops a traumatic neurosis wants security, the neurotic woman rules her family through her illness, or punishes her husband for some real or fancied wrong suffered at his hands. Yet it is not fear in the ordinary sense that makes the Australian blind; he is a man of reckless courage; the workman does not seek to obtain money by fraud; the woman believes herself really ill—otherwise these cases would be malingering.

These people are undoubtedly not aware of the fact that their so-called symptoms are not really symptoms in the ordinary medical sense of the term, as, for instance, the loss of voice as a part picture of a laryngitis, or the vomiting of a meningitis are true symptoms produced by physical causes. They do not realize that hysterical aphonia and hysterical vomiting are manifestations of states of mind, and not at all comparable with real symptoms. And so are all psychoneurotic symptoms manifestations of definite states of mind. But a state of mind that is inadequate to cope with some situation of the social environment in which the patient exists, and which is harmful to himself, is not a true symptom. While the true symptom is due to some change in the patient's own physical economy.

The malingerer's mind, however, is not inadequate in the same sense, his state of mind is antisocial, and harmful to the society of which he is a member, in as much as compensation paid him comes out of the pocket of some one else.

But the dividing line between hysteria and malingering is often very lightly drawn and as Gillespie and Henderson say, "There are all gradations between hysteria and simulations."

There are some significant facts that must not be overlooked in any study of hysteria: Injuries received in sport activities hardly ever bring on a traumatic neurosis. Casamajor in a recent article states: "I have yet to see a patient with a traumatic neurosis which resulted from an injury sustained while working for himself."

It is also generally known that traumatic neurosis gets well when the case has been definitely settled for or against the patient, but it must be so definitely settled that re-opening of the case is impossible and conversely no case of traumatic hysteria has ever been cured during the course of litigation.

When we consider these facts, we are inclined to side with those authorities who advise against the payment of any compensation whatever to patients with traumatic hysteria, if it were not for the observation made by all psychiatrists that compensation does not cure all cases of traumatic hysteria. (I am not considering here patients suffering from a post concussion syndrome).

Frequently a great deal of care is needed when sizing up a psychoneurotic patient. We have found in all these cases a voluntary component—as it has variously been called: a flight into disease, a will to be ill, wishful ideas, and so forth. But there is also another component at work. This may be an hysterical habituation, or an autonomic reflex or a form of dissociation.

Hysterical habituation is the result of normal psychobiological processes. It is the same mechanism which we can observe in all our daily routine performances. When we first learned to write, we consciously and laboriously shaped each letter—now we think only of the meaning we wish to convey and hardly at all of the mechanical process of writing. This process from voluntary conscious effort to automatic, reflexoid performance can be observed time and again: in learning to walk, to dance, to drive an automobile, and so forth.

A person has received a contusion of the ulnar nerve with a resulting ulnar neuritis. As a result of the muscular weakness and the pain a certain position of the hand and fingers is assumed—at first consciously and intentionally. The result is a certain weakness of the flexors and an inability to completely close the fist. If the patient is anxious to get well he will use all possible means to overcome the difficulty. While the hysterical patient makes half hearted attempts, stops when a certain amount of discomfort is reached, and eventually the stiffness of the hand and fingers through habit formation becomes permanent. This patient comes to consultation with the request that she be helped. She works in a store and, on account of her partial disability, she has her wages considerably reduced, which reduction is made up only in part by compensation. She is honest in her desire to be cured, proclaims herself to be willing to undergo any kind of treatment necessary for that purpose. In order to test the muscular and nervous reaction, an electrode is to be applied to her body. When this is done, she suddenly passes into a greatly excited state, she shrinks, withdraws her arm, the arm begins to shake and she breaks out into a perspiration. As Kretschmer points out this patient is harboring two wills, one which is natural but weak, and which asks to be cured and which more nearly corresponds to the patient's personality, and another which protests and says, "I do not want to be cured." But the two tendencies are not only opposed, they are of two different kinds. The wish to be cured is the normal purposive will, which has weighed the pros and cons of the proposition. On the one hand the loss of compensation, but on the other a normal life, increase in earning ability, and so forth. This will is the result of motives. The second volitional component is the result of the stimulus of the momentary situation, it is blind without remembrance of the preceding decision to be well and without thought of the future, that in order to be well certain things must be done. This will is entirely the result of the stimuli of the momentary present situation.

At this moment, a dissociation, a splitting of the personality, has taken place, through which the later acquired intellectual processes are switched off and more primitive, lower level mental processes are acting. These are of the same kind as dreams, hysterical dream states, hypnosis and schizophrenic thinking.

The automatic reactions which enter into the picture of hysteria have been studied thoroughly in subjects that have been through some sudden catastrophe, as for instance, an earthquake. A large number of survivors show traces of their recent affective shock in the appearance of twilight states, stuporous conditions, tremors, tics, cardio-vascular disorders, and the like. All these are the physical resonances of the affective, the emotional experience. These physical symptoms become reinforced, and are kept going by the unconscious, hyponoic, lower level, primitive mental processes mentioned above and a hysteria develops.

Any kind of somatic or mental process can become hysterized and kept going by the most diverse personal motives. But here, again, it must be emphasized that these motives arise from some situation in the patient's social environment which he has been unable to meet in an adequate manner.

If we sum up the process by which a traumatic hysteria develops, we find that generally we have to deal with an inadequate personality type. This person is injured, receives compensation, improves of his physical injuries, but instead of getting entirely well, he develops a string of indefinite symptoms, which keep him from returning to his normal life. The difference between the normal adequate personality and our psychoneurotic patient is this—that the former is eager to be discharged from medical care, that he publicizes to everybody the steps of his improvement. He is optimistic and full of hope. The other, in whom the normal impulses of the personality are not as strongly developed, who, for various reasons, is afraid, has feelings of inferiority or has a less developed social conscience, he undergoes a curious transformation. He doubts that he is as well as the doctor tells him. He is a much less integrated personality, and therefore, selfish impulses prompted by the Id, that is, the uninhibited egocentric, selfish drives become active. He capitalizes his disability, magnifies any subjective feeling of discomfort he may have. At this stage, he presents an attitude, which, to the physician, seems to be of the nature of an intentional conscious process. The normal individual is not easily capable of empathy, of the feeling that a thing like that might happen to himself, it looks too much like conscious exaggeration or worse. But it is just here that the substitution of hyponoc, lower level intellectual processes, takes place. These seem to be less consciously deliberate and determined by motives, but more automatic and reacting to automatic stimuli connected with fear.

To make a diagnosis of malingering is at times very easy, but at others it presents a situation which makes the greatest demand on the judgment, skill, and experience of the examiner, always himself biased one way or the other.

The differentiation in principle is psychological. In malingering, the motive is conscious, the patient consciously pretends; in psychoneurosis, the motive is unconscious. Two lines of investigation must be followed—a neurological and a psychiatric. Neurologically, we must decide whether the lesion, a flaccid paralysis, a spasm of a muscle, a tic (like torticollis), a tremor, corresponds to the classical picture of hysterical symptomatology; whether postural alterations are due to hysterical habituation. Psychiatrically, it will be important to investigate not only the patient's reaction to his illness, but his entire conduct. An hysteric, who, in spite of many complaints, carries on his usual occupation, is not ill.

Some grotesque attitudes, or anomalies of gait, which neurologically are nothing, but habituation, must be considered evidence of abnormality from the psychiatric standpoint. It is certainly not to be assumed that a fairly normal person will habituate himself to the position of camptocornia, or, complete astasia abasia over a period of years.

These are only the major points of view that have to be maintained in sizing up the situation. I might add a few points that can, at times, be helpful.

1. We must never diagnose hysteria until we have excluded organic disease, nor may we diagnose malingering until we have excluded hysteria.

2. The personality of an hysteric often presents abnormalities of behavior in other respects than the specific complaint. There is often excitability, restlessness, extravagant speech.

3. Often a certain indifference.

4. The malingerer, conscious of the unreality of his symptoms, is often more guarded in his statements than the hysteric.

5. The hysterical person often revels in examinations, the malingerer loathes them.

6. Is the morbid symptom or condition capable of simulation—this applies especially to the tremors and spasmophilic episodes.

7. Continuous observation.

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VIRUS DISEASES OF THE NERVOUS SYSTEM

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The outbreak of poliomyelitis this past summer makes some inquiry into the present status of virus diseases of the nervous system a timely matter for consideration. In addition, there has been work done in the past few years that should be a matter of general knowledge.

The nature of viruses is still unknown. As Rivers(1) remarks in his excellent review of viral diseases, there is a question if they are even living organisms. Recent work has stimulated the thought that they might be some inanimate substance generated in living cells under certain conditions. Viruses are usually referred to as intracellular parasites, which vary as to size and probably are not all of the same type.

It is important to realize that the viruses do not behave as bacteria. Too frequently there is the assumption that viruses behave as bacteria, differing only as to size. The essential pathology results from the effect of the virus upon the cell and is characterized by hyperplasia and necrosis of the cells. The inflammatory reaction which is seen post mortem is secondary and follows the necrosis of cells(2). This point has been made clear by experimental work. The inclusion bodies which are a pathologic sign of viral disease are thought to result from the association of the virus with the host.

Hurst(3), in an excellent review, has attempted to temporarily classify the viruses affecting the nervous system. This classification is based upon the tendency of the viruses to affect certain tissues.

1. *Stricter neurotropes.* These viruses attack directly and destroy nerve cells, but are without obvious direct action on other cells. The virus is thought to pass up local nerves to the central nervous system and to multiply only in nervous tissue. The best known example is the virus of *poliomyelitis.*

2. *Pantropic viruses, Type I.* These viruses,

while definitely neurotropic, also directly attack and produce specific lesions in cells derived from all embryonic layers. In the nervous system, they attack both ectodermal and mesodermal structures.

3. *Pantropic viruses, Type 2.* Viruses in this class are neurotropic, but outside the nervous system they attack chiefly epithelial and blood-vascular structures. In this group belongs the virus of equine encephalitis, which has been so prevalent the past summer.

4. *Viscerotropic viruses.* These viruses are not under conditions of natural infections excitants of encephalitis. The lesions they produce are primarily meningeal.

At the present time, the virus etiology of a group of neurologic disorders is quite well established. In this group belongs poliomyelitis, epidemic encephalitis, encephalitis of the Japanese and St. Louis types, and acute lymphocytic choriomeningitis. However, there are a group of neurologic diseases which have been considered nonbacterial in origin and are possibly of viral origin. This may be said of Landry's paralysis, which is a disorder fortunately seldom seen, but its behavior is such that one would suspicion the action of a neurotropic virus. Closely allied are cases that begin as an acute bulbar palsy and are followed rapidly by diffuse central nervous system involvement and death. Illustrative is the following case:

C. B., a thirty-seven year old insurance man, was seen with Dr. W. H. Taylor April 13th, 1935. The history was that of a mild sore throat a week before, with the development two days before admission of blurring of vision and difficulty in swallowing. These complaints were rapidly followed by numbness and weakness of the extremities, and particularly the arms.

Neurological examination:

Cranials. II—marked visual loss, but able to count fingers at three feet. Ophthalmoscopic examination revealed blurring of the disc edges. III, IV, VI—left pupil was slightly greater than the right. There was a complete paralysis of all eye movements. VIII—normal. IX-X—absence of movements of the palate and an inability to swallow. Pulse normal in range. XI-XII—normal.

Motor. There was a very marked weakness of both arms and to a lesser degree of the legs. Chest movements were normal.

Reflexes. Deep - jerks were all absent. Superficial - jerks were also absent. No Babinski.

Sensation. Vibratory sense seemed to be lost throughout. Touch and pain were essentially normal. There was slight muscular tenderness in the legs.

The following day there was a progression of paralysis, with an inability to void. Early the morning of April 15th, there was a rather sudden death, due to respiratory failure.

The spinal fluid showed a cell count of twelve monocytes, a normal protein and a negative Wassermann.

At post mortem, there was an edematous brain, which showed a diffuse round cell infiltration, not particularly about the blood vessels.

Demyelinizing disorders. There is a second group of cases that exhibits pathologically perivascular demyelinization. Rivers and his coworkers(4) have produced demyelinization in monkeys by repeated intramuscular injections of extracts from the normal rabbit brain. Such conditions are seen after infections and vaccination. In such cases, it is possible that there may be an activation of a pre-existing virus. A case which presents such features follows—a girl who, following an attack of measles, developed a clinical picture not unlike multiple sclerosis:

R. B., a twenty-six year old stenographer, was referred to Dr. G. Alexander Young on June 16th, 1936, by Dr. Kolouch of Schuyler, because of a weakness in the extremities.

This young woman had been in good health until an attack of measles in February, 1936. During the period of convalescence, a weakness of the legs developed, which was shortly followed by arm weakness and a difficulty in swallowing. This condition persisted until the time of examination.

Neural status:

Cranials. II—left disc was atrophic and questionable pallor of temporal margin of right disc. III, IV, VI—there was a horizontal nystagmus and paresis of upward gaze. There was no reaction to light in the right pupil and only slight in the left. V-VII—There was a right facial palsy of the peripheral type. VIII-XII—normal, except for moderate weakness of the right palate.

Motor. There was a weakness of the extremities, more marked on the right side. Associated was a bradykinesia and marked rigidity of the right side, with a coarse bilateral intention tremor.

Reflexes. Deep reflexes were increased, more on the right side. There were absent abdominals and bilateral Babinski.

Sensory. All types were normal.

A cisternal puncture showed a normal pressure, 10 monocytes, a normal protein, negative Wassermann, and colloidal gold curve of 5432100000.

Shortly after hospiltalization, the patient developed bulbar symptoms, an aspiration pneumonia, and died.

Poliomylitis. Because poliomyelitis is representative of one of the stricter neurotrophic viral diseases, it may be used to illustrate certain points of importance. At the present time, it is thought that the virus gains entrance to the nervous system by passing up local nerves, and is then disseminated through the nervous system. The old idea that the disease is localized to the anterior horns has long since been disproved—lesions are found scattered through the nervous system. Clinically, this has been in evidence during the recent epidemic. Among our own cases, we have seen the encephalitic type, cases with diplopia, nystagmus, bladder retention, vague sensory levels, and with a marked polyradiculitis. Another point that deserves emphasis is that meningeal signs are not early manifestations of the disease, and may not be present. That meningitis is not primary was shown by Hurst[(2)]. The disease is in the nerve cells, the inflammatory reaction is secondary, and the pial infiltration is probably due to cells that pass out of the cord. The meningeal signs come when the cord infiltration extends to the surface along the vessels of the white matter. In this past epidemic, three cases, undoubtedly poliomyelitis, were seen where there was little increase in cell count (5-10 cells). Such a case may be briefly stated for illustration:

C. C., a nine year old boy, was seen July 10th, 1937, at the request of Dr. W. H. Taylor. Eight days before admission, he developed malaise, headache and general body pains, with fever the next day. Two days before admission, there was weakness of and pain in the lower extremities. When examined, the child was in extreme distress because of the pain and tenderness in the arms and legs. Neurological examination was negative except for evaluation of the motor status, which was difficult because any movement caused severe pain.

Lumbar puncture on admission showed a cell count of four, and three days later, a count of six.

The child recovered nicely after an uncomfortable ten days, except for a slight residual weakness of the right arm.

Encephalitis. The subject of encephalitis as a viral disease is of great interest, in that a variable degree of cellular necrosis and degeneration with secondary infiltration of monomuscular cells can be produced by a variety of viruses. There is undoubted proof that encephalitis of epidemic, St. Louis and Japanese type, all originate from different viruses. Because of the rarity of encephalitis locally in epidemic form the past few years, further discussion will be omitted. However, the past epidemic of poliomyelitis has been accompanied by some cases, particularly in older people who showed encephalitic, rather than myelitic involvement. Hurst doubts that the horse encephalitis that has been so prevalent this past summer, can produce encephalitis in man. This past summer, the brain of a fatal case of encephalitis from a rural community was used to make an emulsion, and was then injected intracerebrally in guinea pigs. The guinea pigs, which will take the virus of equine encephalitis, did not contract the disease. However, no conclusions can be drawn from this one case.

Lymphocytic choriomeningitis. In recent years, there has been described a new type of meningitis, acute benign lymphocytic choriomeningitis[(5)]. This virus is unique among the viral diseases of the nervous system in that it has been isolated from the spinal fluid. However, this virus should not be classed as neurotrophic. The virus has been recovered in the viscera of animals, as well as in the nervous system. The condition usually occurs during the summer months, and as observed clinically, is benign in nature, associated with little fever, but characterized by the usual signs of meningitis. It should be emphasized that all cases of benign lymphocytic meningitis do not originate from this virus. A case, and, as far as known, the only case verified by neutralization tests in this part of the country, can be used for illustration:

A. W., a twenty-eight year old negro railroad porter, was seen at the request of Dr. John R. Nilsson, Chief Surgeon of the Union Pacific Railroad, on June 16th, 1936. At that time, he complained of headache and vomiting, stiffness of the neck, and fever, which had developed two days before, and after an episode of "food poisoning" several weeks before.

At the time of the examination, he showed the usual signs of meningitis, without any local neurological findings, and was complaining severely of his head. The laboratory findings showed an 86% hemoglobin, 4,400,000 red cells, 5,500 whites, with 69% polys. A lumbar puncture was done, which showed an initial pressure of 20 mm. of mercury, 550 cells, 98% lymphocytes, with a very heavy trace of globulin. He had a slight fever on admission, which rose to 101 on the 17th, fell to 99 on the 18th, at which level it remained until the 21st, when it dropped to normal and subnormal readings. Repeated punctures showed:

Date	Cells	Lymphs	Initial Pressure
June 18th	1,400	95%	20 mm. of mercury
June 19th	640	98%	20 mm. of mercury
June 22nd	315	97%	8 mm. of mercury
June 29th	400	94%	
July 6th	102		

Wassermann and colloidal gold were negative.

This patient was discharged the 7th of July, and returned feeling well August 5th, at which time a lumbar puncture showed the fluid under normal pressure, with a cell count of three. A quantitative protein was between two to three times normal.

Knowing of the work being done on viral diseases at the Rockefeller Institute, a letter describing the case was sent to Dr. Thomas M. Rivers. At Dr. Rivers' suggestion, Dr. B. C. Russem was kind enough to inoculate two guinea pigs intraperitoneally. On the tenth to twelfth day, the guinea pigs began to run definite fevers, and on the fourteenth day were sacrificed. The guinea pig brains were sent to New York in 50% glycerine, and an attempt was made to pass the virus. Unfortunately, no virus was found. However, recently the patient's blood serum was sent to the Rockefeller Institute and was found to contain the neutralizing antibodies for the virus of lymphocytic choriomeningitis.

TREATMENT

In the past, any hopes for the effective treatment of viral diseases has been centered about the use of vaccines and serums. This type of treatment in viral diseases in man has caused Rivers[(1)] to remark that except for vaccines against rabies there are none he would administer to his patients.

Vaccine Therapy. Thompson(6), in her review on virus problems in diseases of the nervous sys- emphasizes the many problems related to the production of immunity to virus diseases. Except for rabies where the incubation period is long, vaccines cannot be used in treatment except as a prophylactic procedure. The Brodie and Kolmer vaccines for poliomyelitis were proven dangerous. This was so because it is practically impossible to determine when a virus is completely inactivated. Again, if a virus is completely inactivated, there is serious doubt as to whether or not immunity can be produced.

It is also probable that if immunity could be produced by an inactivated neurovaccine, the resistance would be probably of short duration. Finally, the use of a vaccine containing nervous tissue carries the potential danger of postvaccinal encephalitis.

The experimental work of Jungeblut(7) on monkeys with the poliomyelitis virus deserves mention. It was shown that the presence or absence of virucidal substances in the serum shows little, if any, correlation with the resistance of the central nervous system to reintroduction of the virus. Acquired immunity appeared, from the experiments, to depend upon the presence of an immunity factor in nervous tissue itself.

Immune Serum. In any consideration of treatment of viral diseases of the nervous system, it is necessary to consider certain important factors. In the case of the essentially neurotrophic diseases, as poliomyelitis, the infective agent is either attached to or within many of the nerve cells. Therefore, any antibodies given parenterally must get through the blood-brain barrier and the cell membrane to be effective. For this reason, it is doubtful that a convalescent or immune serum can be effective. From a clinical standpoint in poliomyelitis, there is no evidence of a controlled nature that convalescent poliomyelitis human serum has any value in the treatment of the disease. This statement has been made by Toomey(8), whose review of the subject of immunity in poliomyelitis has been published recently.

Of interest is the work on horse encephalitis, which has been given experimentally to monkeys. In the produced infection following the appearance of humoral neutralizing antibodies, approximately half the monkeys developed encephalitis and died(6).

Chemotherapy. Recently, a considerable amount of interest has been centered about the use of a zinc sulphate spray to the nasal mucosa in epidemics of poliomyelitis. This method of prevention is based upon the work of Schultz and Gebhardt(9), who were able to produce experimentally an effective barrier to the olfactory route of transmission by repeated intranasal irrigation with certain chemicals. There would seem to be no doubt that this is a method that cares for one route of infection. It is a method that has the approval of many of the best students of virus diseases, but is not yet a method that can be recommended for universal application in humans.

Because the behavior of virus diseases of the nervous system discourages the use of an immune serum, it is natural that we should look to chemotherapeutic measures. Recently, there has been published the first instance of activity of a drug against a virus disease. Rosenthal, Wooley and Bauer(10) report that Prontosil has been shown to possess protective action in mice against infection with the virus of lymphocytic choriomeningitis. Prontosil-soluable, as well as some related sulphanilamide compounds not containing an azo linkage, which are more active than Prontosil against bacterial infections, were found to be inactive against this virus infection.

SUMMARY

An attempt has been made to present some of the recent work done by outstanding investigators on the virus diseases of the nervous system. It is felt that their work deserves consideration in obtaining a better understanding of poliomyelitis and the other diseases of the nervous system, of virus origin. Attention is called to a new clinical syndrome, acute lymphocytic choriomeningitis, which has a proven virus origin. Cases are reported in brief for purposes of illustration.

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Q. An acquaintance of mine was formerly a doctor. He is now a traveling salesman. He said he quit doctoring because he was an impatient man. Since he was always quiet and persevering, why did he say that?

A. Probably because he lost his patients.

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Vol. 23 June, 1938 No. 6

ATTENTION NEBRASKA DOCTORS ATTENDING A. M. A.

Register at Exhibit No. 71 if you are going home via Los Angeles.

This for trips and entertainment.

LOS ANGELES COMMITTEE
OF EX-NEBRASKA DOCTORS.

DR. A. L. MILLER OF KIMBALL, THE NEW PRESIDENT-ELECT OF THE NEBRASKA STATE MEDICAL ASSOCIATION

Dr. Miller was born on a Nebraska homestead, Pierce County, Nebraska, May 24, 1892. Attended the country schools, and graduated from the Plainview High School, 1911. Taught for two years in a country school. Attended University of Nebraska for one year. Graduated from the Loyola University, School of Medicine in Chicago, 1918. Interneship at Frances Willard Hospital, Chicago. Has taken post-graduate work in New York City, Mayo's, Chicago, and Europe. Fellow American College of Surgeons. Located in Kimball County, Nebraska, 1919; owns and operates the Kimball Hospital.

He worked his way through high school, doing odd jobs. While a medical student at Chicago he worked as externe in the receiving room of the Cook County Hospital from 11:00 at night until 7:00 in the morning for three years.

He is Past Commander of local American Legion; past Mayor of Kimball; past President of Service Clubs; District Governor of Lions Clubs in Nebraska; member of the school board; member of the first unicameral legislature.

In last ten years Dr. Miller visited every state in the United States, and made two trips to Europe, one completely around the world, visiting Japan, China, and India. He has visited in Alaska, Mexico, Canada, Newfoundland, and a trip to South America this winter. He is married, has one boy.

THE APRIL ANNUAL ASSEMBLY

The registration at the last Annual Assembly held in the Cornhusker Hotel, Lincoln, was 416. The interest of our members in organized and scientific medicine appears greater every year, judging from the good attendance.

We cannot dismiss the meeting without an expression of appreciation to those responsible for its success, for a success it was indeed. The Lancaster County Medical Society is to be congratulated upon its thoroughness and efficiency in the role of host to the Assembly. Only those who have had direct experience in preparation for such a convention can fully appreciate the task.

The Committee on Scientific Exhibit should be well satisfied with its achievements. To the Committee and the exhibitors it must have been a great satisfaction to watch the pleased crowds studying the illustrative material.

Finally, a bouquet to the speakers. Not only did each speaker give evidence of thoroughness in preparation of his subject, but carefulness in delivery as well.

The Program Committee is to be congratulated upon its excellence in choice, both in subject matter and authorship.

Vitamins are somewhat mysterious and more or less unknown substances which are present in foods but are not foods themselves.

THE SECRETARIES' CONFERENCE

The annual conference of Secretaries of constituent County Medical Societies of Nebraska held synchronously with the Annual Assembly of our State Medical Association in April brought to light certain problems which in our opinion are worthy of consideration. Discussion pertaining to membership, attendance at meetings, the role of the medical society in the civic and welfare activities of the community, served to emphasize the increasing importance of the doctor in the social structure of modern life.

The matter of membership, we believe, will adjust itself with the increasing activities. There are still too many ethical, if short-sighted, physicians in the State to whom membership means little above the call for yearly dues. These doctors as yet do not appreciate the changes which have come upon us in the past few years. Membership drives are successful only when the prospective candidate feels that there is definite need for his interest in a given organization. With extended activities we may expect a growth in number of participants.

The public is growing steadily more conscious of the blessings of medical achievements in health preservation and in disease prevention. Lay people are becoming accustomed to lean upon their medical advisor for information on matters pertaining to these subjects. Most medical societies have become aware of their responsibilities. They must make such information available to all who ask for it. The secretary of the county medical society is the logical medium through which this public service may be rendered. His office should be the clearing house to which individuals and groups interested in the advancement of health education may turn for advice and guidance.

We believe that these annual meetings of Secretaries are too important to receive the casual attention hitherto shown them. It may be well to so arrange the time that more extended discussion be possible. These sessions should not be held concurrently with the Annual Assembly. A special afternoon or evening prior to or following the general sessions will not only obviate the distractions incident to the usual setting, but will afford greater concentration for the task on hand. The Secretaries are not only important officers of local societies; their office constitutes an important item in the welfare of the Nebraska State Medical Association.

Today's nurse need not give the child more time but instead better thought.

IMMUNIZE FOR DIPHTHERIA

One of the major criticisms leveled against the practice of medicine is laxity on the part of the private physician in his utilization of preventive measures. Recent studies of the incidence of inoculation against diphtheria in the schools of the largest city in Nebraska revealed the startling fact that in some of these schools not more than five per cent of the children have been immunized against the disease. In one of the wealthiest districts included in the survey, the children who received toxoid or toxin-antitoxin approximated thirty-five per cent.

When we recall that immunization against diphtheria is a well established, safe and effective procedure it is difficult to explain the lag on a basis other than disinterest or indifference, or both. We contend that every physician who has children under his care has overlooked his professional duty unless the parents have been advised of the dangers of diphtheria, and of the mode of its prevention.

No child needs to have diphtheria.

A MESSAGE FROM THE PRESIDENT

Dr. Homer Davis

In the process of our transition from the old constitution and by-laws to the new, there has been expressed throughout the state some doubt as to the status of our committees. In order to remove any feeling of insecurity, your president is issuing a proclamation.

It is hereby proclaimed, decreed and published:

1. That all committees formed and appointed or selected under the old constitution and by-laws are hereby ordered to be continued in personnel and function during this coming year until our next annual meeting.

2. That all special committees formed and appointed by the past president, Dr. Roy Fouts, shall be continued as to function and personnel until our next annual meeting.

3. That any vacancies occurring on these committees from service of term or by resignation will be filled by appointment in the usual way.

HOMER DAVIS.

We hope to get this committee business straightened out by the next issue of the Journal. The list and personnel of each committee can then be published.

Dr. George Covey sets a good example for all of us in the following letter which is published with his consent:

May 6, 1938.

Dr. Homer Davis,
Genoa, Nebraska.

Dear Homer:

It is a good thing to occasionally take stock of one's situation much as the grocer does at inventory time. In doing this I discovered that I am a member of the following committees in the State Medical set-up:

Cancer Committee, Medical and Public Health Education Committee, Advisory Committee to Board of Control, Advisory Committee to Planning Board, Advisory Committee to Auxiliary, the new committee appointed by the council in lieu of Board of Trustees.

There are at least two good reasons why you should replace me on some of these. The first is that this work should be decentralized, chiefly to get more doctors thoroughly conversant with the State Medical Association work and working at it.

The second, and more important to me, is my need of relief as to time. My first impulse would be to remain only on the new business committee but I don't like to leave those activities which I was instrumental in initiating, so will also try to handle the Medical and Public Health Education and Advisory Committee to the Planning Board. The others I would like to drop.

I hope you can see my point of view and that you will act accordingly.

Yours truly,

GEO. W. COVEY.

Your president is in accord with Dr. Covey's idea of decentralizing the work in the N. S. M. A.

We have many doctors out in the state and in our larger cities who are well qualified and who are ready and willing to work for our association on important committees. It will help us a lot to get these doctors interested in the work.

Shall we all, then, take an inventory of our committee appointments and simplify these appointments to not more than two at most. This is a patriotic move requested by your president.

A local boy, a first-grader, was asked what he had learned in school the first few days. He said he didn't learn anything in school, but he sure learned a lot at recess.—*Downs, Kan., News.*

EXAMINATIONS: AMERICAN BOARD OF OBSTRETRICS AND GYNECOLOGY

The oral, clinical, and pathological examinations for Group A and Group B applicants will be held in San Francisco, California, on Monday and Tuesday, June 13 and 14, 1938.

An informal dinner for the Diplomates of this Board, their wives and others interested in the work of the Board, will be held at the Palace Hotel, San Francisco, on Wednesday evening, June 15, 1938, at seven o'clock. Dr. William D. Cutter, Secretary of the Council on Medical Education and Hospitals of the American Medical Association, will address the group, and the successful candidates of the preceding two days' examinations will be introduced in person. Tickets, at $2.25 each, may be obtained in advance from Dr. Joseph L. Baer, 104 S. Michigan Avenue, Chicago, Illinois, or at the door. Reservations should be made in advance if possible.

Application blanks and booklets of information may be obtained from Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburg (6), Pennsylvania.

RIBOFLAVIN: DIETARY SOURCES AND REQUIREMENTS

Henry C. Sherman and Caroline Sherman Lanford, New York (*Journal A. M. A.,* April 16, 1938), says that riboflavin appears to be formed primarily in the green leaves of actively growing plants and to remain there in higher concentration than elsewhere in the plant. There are indications that, as the leaves mature and dry, there may be a considerable diminution in their riboflavin value. As yet, estimates of the amounts of riboflavin required for normal human nutrition are necessarily matters of judgment rather than of actual direct measurement. The independent judgments of Rose and Stiebeling are in substantial agreement and are probably the most influential estimates thus far available. Rose has suggested for children up to 10 years of age at least 400 units a day in all cases, or 20 units per hundred calories if more than 2,000 calories a day is consumed; for adults, 20 units per hundred calories. The recommendation of Stiebeling is 450 units for boys less than 6 and girls less than 7 years of age, and 600 units for older children and adults, or 570 units per capita of the population.

Young and inexperienced father (looking at triplets the nurse had just brought out): "We'll take the one in the middle."

In Memoriam

They call it death, when the angel comes
To open the door of life;
The door that opens and shuts us in
From the world's toil and strife:
When the boon of rest comes to weary souls,
When the burden of care is lost,
When the harbor of Heaven welcomes those
O'er the world's sea—tempest tossed—
Thank God for the door, whatever the name,
That awaits at the end of the road,
For it opens wide to let us in
To the Paradise of God.

John Thomson	May 23, 1937
C. Q. Dodd	May 24, 1937
F. S. Furman	June 6, 1937
John G. Neely	July 7, 1937
Chas. S. Boggs	August 1, 1937
Emma M. Easterday	August 9, 1937
Don L. Smith	August 10, 1937
Marie Ames	September 6, 1937
W. R. Talbot	September 6, 1937
T. P. Livingston	September 7, 1937
F. J. Schleier	September 11, 1937
Elmer R. Porter	October 18, 1937
S. A. Campbell	October 19, 1937
Geo. O. Remy	October 23, 1937
J. C. Shepard	November 7, 1937
Z. La Fayette Kay	November 19, 1937
Edward Oxford	December 6, 1937
C. A. Reynolds	January 1, 1938
J. T. Lawson	January 26, 1938
Glenn W. Briggs	February 4, 1938
Frank Way	February 7, 1938
I. L. Smith	February 11, 1938
W. O. Colburn	April 9, 1938
P. A. Sundbury	April 24, 1938
J. N. Cambell	April 12, 1938
Roy E. Hull	April 15, 1938

In Memoriam

And they are gone. The shadow watching men
At last has claimed its forfeit. And there rose
A cry of anguish mounting to the stars
Among the many who had found them fair.

Sleep on, O friends, until the waking day;
And ever we who loved their presence here
Will keep for them, through changes manifold
A tender memory, growing with the years.

◆

F. A. Long, M. D.

Died - November 24, 1937

President, Nebraska State Medical Association
1906 - 1907

Editor, Journal of Nebraska State Medical Association
1920 - 1937

In Memoriam

**For them the harbor bar is passed,
And rest has come at last.
Their gentle ways and kindly smile
Are only lost to us awhile;
Sometime, somewhere, 'twill be all right,
And so till then we will not say "Farewell,"
But just "Good-night!"**

⁂

P. H. Salter, M. D.

Died - September 17, 1937

**President, Nebraska State Medical Association
1910 - 1911**

In Memoriam

So be my passing!
My task accomplished and the long day done,
My wages taken, and in my heart
Some late lark singing,
Let me be gathered to the quiet west,
The sundown splendid and serene,
Death.

◆

W. O. Bridges, M. D.

Died - March 6, 1938

President, Nebraska State Medical Association
1897 - 1898

COUNCIL MEETING, APRIL 26, 1938

The first meeting of the Council was held at the Hotel Cornhusker in Lincoln, April 26. 1938 at 3:30 p. m. The meeting was called to order by President King. The following members were present: Drs. Bryson, Neumarker, Boyer, Brush, Douglas, King, Overgaard, Douglas, Cooper and Conrad. Drs. Adams and Selby were also present.

Dr. Bryson moved that the report of the Delegate to the A. M. A. presented by Dr. Fouts be recommended to the House of Delegates and that report be accepted and published. Seconded and carried.

Dr. Overgaard talked on the proposed resolution regarding principles and relations between radiologists and hospitals. Dr. Rork moved that it be approved and recommended to the House of Delegates. Seconded by Dr. Selby. Carried.

Dr. Cooper brought up the matter of the suit brought by Dr. J. P. Weyrens against the Scottsbluff County Society.

Dr. Bryson moved that it be recommended to the House of Delegates that they appropriate from the Medico-Legal Fund four hundred dollars to reimburse the Scottsbluff County Society for one-half of their expense in fighting this suit. Seconded and carried.

It was moved that the following become honorary members of the Nebraska State Medical Association:

Rudolph Rix, Omaha.
Don F. Morris, Lewellen.
A. E. Cook, Randolph.
M. L. Sparks, Bloomington.
J. A. Waggoner, Humboldt.
Geo. J. Rubleman, Tecumseh.

Seconded and carried.

It was moved and seconded that the Council adjourn until 4:30 Wednesday afternoon. Carried.

(Continued in July issue of the Journal).

MINUTES OF HOUSE OF DELEGATES FIRST SESSION, APRIL 26, 1938

The first session of the House of Delegates was held at the Hotel Cornhusker in Lincoln, April 26, 1938 at 12:30 p. m. Forty-nine members were present. The meeting was called to order by President Fouts.

The minutes of the 1937 meeting were called for.

Dr. Earl Johnson moved that inasmuch as the minutes of the 1937 meeting were published in the Journal that the reading of these minutes be dispensed with and that they be adopted as published. Seconded and carried.

Nominations were now in order for President pro tem. Dr. Selby moved that Dr. Rudolph Decker be nominated. Seconded and carried.

A motion was made that Dr. Rudolph Decker be unanimously elected as President pro tem. Seconded and carried.

The report of the Delegate to the American Medical Association was called for. This report was made by Dr. R. W. Fouts. Dr. Johnson moved that this report be accepted and referred to the Council for further action. Seconded and carried.

The report of the Campaign Committee was called for. Dr. Adams read a letter from Dr. Wegner stating that having made a report to the Council in January and having nothing further to add there was no report from the Campaign Committee.

The report of the Medico-Legal Advisory Committee was called for. Dr. Fouts moved that inasmuch as this report was published in the Journal the report be accepted as published. Seconded and carried.

The report of the Medical Student Loan Fund was called for. Dr. Overgaard stated that he had no further report other than the one published. The motion was made that this report be accepted. Seconded and carried.

The report of the Council was called for. Dr. Overgaard moved that inasmuch as the report of the Council was made before the Council in January and published in the Journal that the reading of this report be dispensed with and that it be adopted as published. Seconded and carried.

The report of the Secretary-Treasurer was called for. Dr. Adams stated that this report was made to the Council in January and published in the Journal and suggested that this report be approved as published. Dr. Bryson moved that this report be accepted as published in the Journal. Seconded and carried.

The report of the Committee on Memorials and Communications was called for. This report was given by Dr. Overgaard and all the members remained standing during the reading of this report. Dr. Overgaard moved that 4 pages be set aside in the Journal as a memorial to these departed members. Seconded and carried.

Dr. Rork submitted an amendment to the By-Laws:

Chapter XIV—Section 6. For the guidance of component societies a copy of the compiled statutes of Nebraska pertaining to revocation or suspension of licenses to practice medicine in the State of Nebraska is herewith inserted.

..............1. Fraud in procuring his license. 2. Immoral, unprofessional or dishonorable conduct. 3. Habitual intoxication or addiction to the use of drugs. 4. Conviction of a felony. 5. Use of untruthful or improbable statements in advertisements. 6. Distribution of intoxicating liquors or drugs for any other than lawful purposes. 7. Willful or repeated violations of this article or of the rules and regulations of the Department of Public Welfare relating to Sanitation, Quarantine and School Inspection. 8. Continued practice while knowingly having diphtheria, scarlet fever, small-pox, measles, or other contagious disease in a dangerously contagious state. 9. Failure to pay annual renewal fees.................

Nebraska Session Laws for 1937.

..............Unprofessional Conduct Defined. For the purpose of the preceding section unprofessional conduct shall consist of any of the following acts:

..............1. Solicitation of professional patronage by agents or persons popularly known as "cappers" or "steerers," or by profiting by the acts of those representing themselves to be agents of the licensee. 2. Receipt of fees on the assurance that a manifestly incurable disease can be permanently cured. 3. Division of fees or agreeing to split or divide the fees received for professional services with any person for bringing or referring a patient or assisting in the care or treatment of a patient without the consent of said patient or his legal representative. 4. Advertisement of any medicine or means whereby the monthly period of women can be regulated or the menses reestablished if suppressed. 5. Procurement of, aiding or abetting in the procurement of a criminal abortion. 6. Willful betrayal of a professional secret. 7. Applies to dental practice.

Any component Society having substantial evidence of any violation of this act, by any member or members, and failing to take action on such evidence shall be liable for revocation or suspension of its charter at the discretion of the Council.

Dr. McGrath proposed an amendment to the Constitution.

PRESIDENT-ELECT — The House of Delegates shall select three members of the Association whose names shall be presented to the general session as candidates for President-elect of the Association. On the morning of the last day of the annual meeting, at a time designated by notice on the preceding day, a President-elect shall be elected by ballot of members of the Association, from the three nominated by the House of Delegates.

On first ballot all three shall be balloted on. If one received a majority of all votes cast, he shall be declared elected. If no one receives a majority of all votes cast, a second ballot shall be taken but the name of the one receiving the lowest number of votes shall be dropped from the ballot. When one candidate receives a majority of all votes cast, he shall be declared elected President-elect.

Next in order of business was the amendment to the Constitution submitted last year creating the office of Speaker of the House. Dr. Johnson moved that the proposed amendment be adopted. Seconded and carried.

Dr. Johnson moved the adoption of all the By-Laws as read and recommended at the special session of the House of Delegates. Seconded by Dr. Selby.

Dr. Selby amended the motion as follows: That the reading of the By-Laws be dispensed with and that they be accepted as the By-Laws of our present Constitution, as discussed and approved and recommended yesterday. Seconded and carried.

It was moved, seconded and carried at the special session of the House of Delegates that the Constitution as discussed and agreed upon now be officially introduced to lay on the table for a year.

The following were named for the Committee on Nominations:

First District—E. M. Walsh, Omaha.
Second District—F. L. Rogers, Lincoln.
Third District—I. W. Irvin, Auburn.
Fourth District—H. W. Francis, Bancroft.
Fifth District—C. G. Moore, Fremont.
Sixth District—J. M. Woodard, Aurora.
Seventh District—Rudolph Decker, Byron.
Eighth District—O. W. French, Page.
Ninth District—B. R. McGrath, Grand Island.
Tenth District—M. B. Wilcox, Holdrege.
Eleventh District—Harvey Clarke, North Platte.
Twelfth District—Roy Sinclair, Kimball.

Dr. Benson moved that the nominees as read be elected as the Nominating Committee. Seconded by Dr. Selby. Carried.

The Eighth District was without a representative on the Nominating Committee. Dr. Selby moved that Dr. Douglas' appointee be accepted by this House of Delegates as representative on the Nominating Committee. Seconded and carried.

It was moved that the House of Delegates adjourn. Seconded and carried.

(Continued in July issue of the Journal).

AMERICAN MEDICAL ASSOCIATION DELEGATES REPORT TO THE HOUSE OF DELEGATES OF THE NEBRASKA STATE MEDICAL ASSOCIATION

The 88th annual session of the American Medical Association was held June 7-11, 1937, at Atlantic City, New Jersey. The House of Delegates convened on the morning of the first day, and as in previous sessions, most of the morning was occupied in listening to the addresses of the Speaker of the House, the President-Elect and the President.

The President, Charles Gordon Heyd, called attention to the accomplishment of the medical profession during the past quarter of a century and stated that "The profession under the give and take of free competition in medical practice has produced insulin, fever therapy and vitamin nutrition, has developed orthopedic, cancer and restorative surgery, has made diagnosis precise by advances in x-ray and instrumentation, has evolved effective therapy with x-ray and radium—in brief, has been so prolific in useful discoveries that medicine is to be rated well in advance of any of the physical sciences."

He stated that Organized Medicine was not immune from critical study and must face the answer to certain impending questions. In discussing the question as to whether the "individual has a claim on the Government for medical care," he pointed out that, "Governmental agencies control education, influence public opinion, have in a major portion the management of widespread health movements, and with legislative enactment controls hours of labor, child labor and conditions under which labor works." He pointed out, "it would be apparent that medical care is a problem not alien to the purpose of Government for the health of its citizens must be one of the paramount considerations of the State."

He called attention to the part of our hospital groups in fostering Socialized Medicine when he said: "It is not compulsory health insurance or state medicine that will destroy free and competitive medical practice. It is an extension of institutional medicine for which the state will provide the funds. The hospitals under the full-time paid physicians are in spirit, and many times actually, practicing medicine." In discussing the part played by members of our own profession, he stated: "It is apparent that solidarity of the Medical Profession is under constant sabotage by groups on the fringe of the Profession. Furthermore, we have within the Profession certain pressure and compulsion groups that are endeavoring by indirection to set up alien forms of medical service. The fractionalization of medical organization, or better, fragmentation has done much to implement the enemies of the Profession. It seems wise that we re-examine and re-appraise our medical policies."

He must have anticipated the resolution that was to be presented later in the session by the New York Delegation which created some furore in the House until it was later killed by an overwhelming sentiment against it. This resolution, with which you are all familiar, was the same as the one promulgated later in the year by the self-appointed committee of 430 including a few misinformed brothers of our own state. This action somehow gave a rebirth to the sentiment expressed in the resolution and the address of the President of the American College of Physicians at its annual meeting the fore part of the present month added more fuel to the flame, at least as far as the public press was concerned. Such pronouncement coming from within the ranks of our own profession should keep every physician who has to "battle the game" for livelihood, alert to these insiduous invasions of our present free and untrammeled system of practice and forestall the effect of the too-frequently expressed opinions of those individuals whose future is secured by endowed institutions, foundations or positions of preferment. We should urge an unequivocal opposition to all forms of compulsory health insurance. Insurance schemes tend to relieve the individual of his own responsibility and to increase the prolongation of illness. In short, under an insurance scheme it is profitable for persons to be sick.

The address of President-Elect John H. J. Upham, Dean of the Ohio State Medical School at Columbus, Ohio, stressed the extension of postgraduate medical instruction and the education of the public along medical lines.

The Secretary's report disclosed a membership of 105,460, a gain of 4,500 during the previous year. A new apportionment of delegates was made on the basis of one delegate for each 825 members. On this basis, Massachusetts and the Philippine Islands each gained one delegate, New York two delegates, and Missouri and Oklahoma lost one each.

A resolution was adopted reaffirming the opinion that a physician should be a member of his local county medical society to be eligible to membership on the staff of any hospital approved for training of internes.

In response to a resolution with reference to giving of anesthetics, the following committee report was adopted:

"The administration of anesthetics, the interpretation of roentgenograms, the interpretation of laboratory findings and the application of physical therapy measures constitutes the practice of medicine and should be confined to those who are licensed practitioners of medicine."

An item of special interest in connection with the 1937 session was the request from Senator J. Hamilton Lewis of Illinois to address the House of Delegates. There was much speculation prior to his coming as to the purpose of the request and still further speculation after he had gone. However the address presumed to deal with the legislation pending in Congress relating to Socialized Medicine. It provided good copy for the newspapers at the time and was the subject of many editorials in some of our national magazines, such as "Time" and others. It is interesting to note, however, according to more recent newspaper reports, that since the Senator's visit to Europe and since he has had an opportunity to view State Medicine working and its results first hand, he repudiated his first statement with reference to it.

The reference committee on medical education to which a resolution dealing with contracts for hospitalization was referred was reported and adopted as follows:

"It is recommended that the contract benefit provided by group hospitalization insurance should be limited to the room, bed, board and nursing facilities ordinarily provided by hospitals and routine medicine." It was further recommended "that interested medical groups and the American Hospital Association confer in clarifying the twilight zone between hospital service and medical care."

Many other matters occupied the attention of the House of Delegates at its three regular sessions and two executive sessions. We have attempted to touch upon only those more important things in which this Body would be interested.

The usual scientific program was carried out during this session. The scientific and commercial exhibits were said to be the largest ever exhibited at a medical meeting. Dr. Irvin Abell, Louisville, Kentucky, for many years chairman of the Scientific Assembly, was chosen President-Elect. Dr. Olin West, Secretary, was elected to succeed himself. Dr. Junius B. Harris of Sacramento, California, was elected Vice-President and San Francisco was chosen as the place of meeting for 1938. About sixty Nebraska physicians were in attendance.

Respectfully submitted,
R. W. Fouts, M. D.,
B. F. Bailey, M. D.

The really well fitting shoe will leave your mind free from foot thought for twelve hours or more.

ANNOUNCEMENTS

To the Members of the Nebraska State Medical Association:

At a recent meeting of a small group of former Nebraska physicians, we decided that it would be advantageous to have a central information bureau for Nebraska physicians who visit the American Medical Association meeting in San Francisco next June, and later visit Los Angeles. We have arranged for information to be available to any Nebraska physician desirous of locating any of his former Nebraska doctor friends who now live in Southern California.

We have also arranged schedules of the clinical work of the various Los Angeles hospitals, which will be available for our visiting friends. These schedules may be procured either by mail, or by calling in person at the Los Angeles Institute of Radiology, or by telephoning DRexel 8171. Any physician intending to visit Los Angeles following the American Medical Association meeting should advise us, and set forth the things that he would like to see and do during his stay in this city. If we can have this advance information it will be a pleasure to make proper reservations or arrangements.

We have planned a get-together meeting of all visiting and former Nebraska physicians now residing in California for the first Monday following the American Medical Association meeting, which will be June 20, 1938, at the Los Angeles Institute of Radiology, at eight o'clock in the evening.

Will you be so kind as to publish in your Journal the substance of this communication?

Very truly yours,

Roscoe L. Smith.
Newell Jones, M. D.
Wm. Nance Anderson, M. D.
Kenneth Davis, M. D.

CONVALESCENT SERUM

The Nebraska Convalescent Serum Committee has on hand a small quantity of human convalescent measles serum for use in the prevention and treatment of measles. The amount is not sufficient to distribute to the various depots in the state, but is available on call here in Omaha. Anyone desiring this serum communicate with the undersigned.

Floyd S. Clarke, M. D.
314 Medical Arts Bldg., Omaha,
Phone Atlantic 0338.

GRADUATE COURSE IN ELECTROCARDIOGRAPHY

Two Weeks—August 22 to Sept. 3, 1938

An intensive two weeks' course in Electrocardiography for graduate physicians will be given at Michael Reese Hospital from August 22 to September 3, 1938, inclusive, by Dr. Louis N. Katz, Director of Cardiovascular Research. As group and individual instruction will be given, the course is open to both the beginning and advanced student in Electrocardiography.

There will be practice on several electrocardiographic machines and discussion of the principles of their construction and use. There will be sessions on interpretations of electrocardiograms and practice with unknown records. Lectures on the principles involved in standard and chest leads will be given.

It is planned to individualize the course so that at the end of the period each student will be capable of taking and properly interpreting routine electrocardiograms. In order to accomplish this purpose the class will be limited in number. It is imperative, therefore, that reservations be made early.

For further information address The Medical Librarian, Michael Reese Hospital, 29th and Ellis Ave., Chicago, Ill.

AUXILIARY NEWS

The Auxiliary to the Nebraska State Medical Association held its 13th Annual Meeting at the Cornhusker Hotel, Lincoln, April 26, 27, and 28, 1938.

The business sessions were presided over by the President, Mrs. Earl E. Farnsworth. A Memorial Service for Mrs. W. D. McGrath was given by Mrs. Howard Royer. Dr. Homer Davis greeted the Auxiliary. Rewards for 100% membership, were presented to Tri-County No. 1 Richardson County, and Four-County. New officers elected were as follows:

President—Mrs. C. W. Pollard, Omaha.

President-Elect—Mrs. J. E. M. Thomson, Lincoln.

1st Vice Pres.—Mrs. C. E. Abbott, Minden.

2nd Vice Pres.—Mrs. Olin Cameron, Omaha.

Secretary—Mrs. Herman Johnson, Lincoln.

Treasurer—Mrs. Elmer Hansen, Lincoln.

Directors—Mrs. F. F. Teal, Lincoln; Mrs. Claude Selby, North Platte.

Delegates to the Auxiliary to the American Medical Association in San Francisco—Mrs. James Kelley, Omaha; Mrs. E. S. Wegner, Lincoln; Mrs. C. F. Ferciot, Lincoln.

The new president, Mrs. C. W. Pollard, announced the presentation of $100.00 by the State Medical Association to be used for promotion of the work of Organization and Legislation.

RESOLUTIONS

April 27, 1938

Resolved, That we, the members of the Woman's Auxiliary to the Nebraska State Medical Association, assembled in Lincoln in annual meeting express our appreciation to:

1. The president and officers of the state auxiliary for a very successful year.

2. The Lancaster County Auxiliary for its gracious hospitality.

3. The officers, delegates and members of the convention and the Lancaster County Medical Society for their many courtesies, and their share in our financial obligations.

4. Mrs. Allen Campbell, president of the Lancaster County Auxiliary and general chairman of arrangements and her assistants for their careful plans for efficient business sessions and their efforts to create a closer fellowship among physicians' families.

5. Mrs. H. E. Flansburg for her tireless efforts in securing articles for our first exhibit of Pioneer Medicine in Nebraska.

6. Mrs. J. E. M. Thomson who so generously opened her home for the Auxiliary Tea.

7. The management of the Cornhusker Hotel and those who contributed in making the convention a success.

8. And whereas Mrs. C. C. Tomlinson will be honored with the presidency of the Auxiliary to the American Medical Association—

Be it further resolved, That we, the members of the Auxiliary to the Nebraska State Medical Association, pledge our loyal support to her throughout her term of office.

9. And be it further resolved, That these resolutions be printed in the Journal of the State Medical Association, and in our own minutes.

NEWS AND VIEWS

According to official figures, Otoe County spent $8,870 for medical assistance from March 1, 1937, to March 31, 1938.

Dr. C. D. Evans, Sr., of Columbus, has retired from active practice. The doctor is 82 years old and had been in practice in the same community for the past 56 years.

A bill amending the Education Law and prohibiting medical advertising by means of handbills, letters, radio, posters, magazines, slides and other such media has been signed by Governor Lehman of New York. The law, aimed at quacks, empowers the medical grievance committee of the State Board of Medical Examiners to deal with offenders.

The New York legislature also passed a bill forbidding marriage of persons having a communicable disease. Other states will gradually fall in line which will be a good thing for coming generations.

Three members of our Association received honors at the recent meeting of the American

Congress of Physicians in Atlantic City: Dr. J. Dewey Bisgard was elected to membership of the the American Surgical Association, Dr. A. E. Bennett to the American Neurological Association, and Dr. Herman F. Johnson to the American Orthopedic Association. All three are from Omaha.

"There is a great deal of unrest in this country today . . . What we need is calmness. Calmness not only in politics but as well in medicine . . . I believe the medical profession ought to meet its problems in its own way,—in a private way, rather than have the government do it. Poor people need attention it is true. But State Medicine is not the solution. We don't want Hitlerized medicine in America." Excerpt from an address by Bishop James H. Ryan, S. D. T., at the annual staff dinner of St. Joseph's Hospital, Omaha, May 3, 1938.

Dr. L. D. Dieter of Otoe who has been studyinig in Vienna for some time was recently elected president of the American Medical Association of that famous city, according to press reports.

The York Clinic Hospital closed May 1. According to Dr. D. D. King, medical director of the Clinic, the staff will unite with the Lutheran Hospital of York. The clinic hospital was established in 1920 by Drs. O. M. Moore and George Shidler.

Dr. A. L. Miller, president-elect of the Nebraska State Medical Association will not complete his filing for Lieutenant-Governor. He intends to devote all of his spare time to the office to which he was elected at the last Annual Assembly.

Dr. George B. Robertson was elected president of the Omaha Child Welfare Association in May, succeeding Dr. C. W. Pollard.

THE HISTORICAL EXHIBIT AT THE ANNUAL ASSEMBLY

The Journal wishes to commend the Committee on the interesting historical exhibit held at the Cornhusker Hotel. Among the articles shown were: A diploma with a hand-made seal received in 1864 by Miss Johanna Swenson from the School of Midwifery in Stockholm, Sweden. Miss Swenson, according to history, practiced in Stromsburg in 1882. The display was loaned by Mrs. H. H. Twarling of Stromsburg.

A pair of spectacles over 150 years old was displayed by Dr. Clark of Fairbury.

Dr. Prescott of Tecumseh showed the first X-ray machine used west of Chicago. It was made by a Nebraska electrician in 1889 from a picture in a magazine.

A medical case used many years ago by Dr. M. H. Garten was loaned by Mrs. Garten.

Scales for weighing drugs, and an electrical machine, the forerunner of the present diathermy machine and which was used by Dr. Latta of Lincoln, was loaned by Mrs. C. F. Ladd.

Dr. W. L. Albin of Lincoln showed a bloodletting gadget over 200 years old and a pair of spectacles over 100 years old. Many other articles and books were on display.

The Lincoln Auxiliary deserves much credit for such an extremely interesting exhibit. Mrs. Harry Flansburg was the chairman of this committee.

NEEDS KNOWLEDGE FOR AMUSING SICK CHILD

With knowledge of types of playthings most suitable for bedridden children, a nurse can provide amusement for them and still not devote too much of her time to this matter, as Rose H. Alschuler and LaBerta A. Hattwick point out in their article "Amusing the Sick Child" in the April *Hygeia*. In other words, she need not give more time but better informed thought.

She needs to know, for instance, that all young children, sick or well, would rather play with toys than with other children or adults. She should know that raw materials, such as blocks, clay, crayons and sand, will interest children for a longer period and will be adapted to a wider age range than the often selected mechanical toys.

Further, she needs to know that in a number of hospitals, methods of giving children sand and clay have been devised that give freedom to play without putting on the nurse undue hardship of cleaning up. Picture books, beads, peg-boards and puzzles make for more quiet play and hence are better bed occupations than such materials as bean bags, balls and small automobiles.

Certain activities, such as stringing beads, working puzzles, cutting and sewing, may require excessive concentration and eyestrain in the child who is under par physically; hence, they should not be used without the physician's advice. Play materials for young children meet many personality and educational needs.

(STATE) DEPARTMENT OF HEALTH

Lincoln, Nebraska

MORBIDITY SUMMARY—PRINCIPAL DISEASES

	1938			1937		
	April	March	Total to Date	April	March	Total to Date
Chicken-pox	198	240	897	248	106	598
Diphtheria	2	23	74	10	10	38
Influenza	27	64	128	0	27	449
Measles	598	166	846	144	25	217
Meningitis, C. S.	2	24	31	7	3	17
Poliomyelitis	0	0	2	2	1	5
Scarlet Fever	152	202	796	413	336	1426

	1938			1937		
	April	March	Total to Date	April	March	Total to Date
Smallpox	37	28	107	47	39	125
Tuberculosis	17	17	64	26	11	68
Typhoid Fever	1	0	7	1	0	8
Whooping Cough	57	43	179	86	41	202
Gonorrhea	81	68	351	55	68	232
Syphilis	82	59	312	52	71	209

SPEAKERS' BUREAU

The following addresses have been arranged through the Speakers' Bureau of the Educational Committee of the Nebraska State Medical Association:

Medical Society Programs—March 1 to May 15, 1938

Date	Place	Organization Addressed	Speaker	Title of Address
Mar. 1	Beatrice	3d Councilor, Dist. Refresher Course	Dr. J. E. Henske Omaha	Rheumatism and Heart Disease in Childhood.
Mar. 2	O'Neill	8th Councilor Dist. Refresher Course	Dr. E. S. Wegner Lincoln	Infectious Diseases in Childhood.
Mar. 3	Kearney	9th Councilor Dist. Refresher Course	Dr. Floyd Clarke Omaha	Prevention of Disease in Childhood.
Mar. 8	Pawnee City	3d Councilor Dist. Refresher Course	Dr. Herman Jahr Omaha	Behavior Disorders of Children.
Mar. 9	O'Neill	8th Councilor Dist. Refresher Course	Dr. L. O. Hoffman Omaha	Syphilis in Pregnancy.
Mar. 9	Columbus	County Medical Society	Dr. Palmer Findley Omaha	Puerperal Infection.
Mar. 9	Columbus	County Medical Society	Dr. Floyd Clarke Omaha	Prevention of Disease in Childhood.
Mar. 9	Columbus	County Medical Society	Dr. O. J. Cameron Omaha	The Early Diagnosis of Syphilis.
Mar. 10	Kearney	9th Councilor Dist. Refresher Course	Dr. Paul Bancroft Lincoln	Care of Premature.
Mar. 14		Dundy County Med. Soc. Ref. Course	Dr. E. S. Wegner Lincoln	Infectious Diseases.
Mar. 16	O'Neill	8th Councilor Dist. Refresher Course	Dr. Harold S. Morgan Lincoln	Care of Women During Pregnancy.
Mar. 17	Kearney	9th Councilor Dist. Refresher Course	Dr. Harold S. Morgan Lincoln	Care of Women During Pregnancy.
Mar. 24	Fairmont	Fillmore-Saline Co. Med. Soc.	Dr. Clayton Andrews Lincoln	The Importance of the Differential Diagnosis Between Duodenal and Gastric Ulcer.
Mar. 24	Fairmont	Fillmore-Saline Co. Med. Soc.	Dr. E. B. Reed Lincoln	The Question of Septicemia.
Mar. 31	Grand Island	Councilor Meeting	Dr. A. E. Bennett Omaha	The Present Day Management of Syphilis.
Apr. 4	Lexington	Dawson County Med. Soc.	Dr. H. B. Hunt Omaha	The Treatment of Cancer.
Apr. 4	Lexington	Dawson County Med. Soc.	Dr. D. W. McLaughlin Omaha	Surgical Aspects of the Acute Abdomen in Infancy and Childhood.
Apr. 7	Hastings	10th Councilor Dist. Meeting	Dr. F. W. Niehaus Omaha	Coronary Artery Disease.
Apr. 11	Wahoo	6th Councilor Dist. Refresher Course	Dr. Ralph Luikart Omaha	Technique of Instrumental Delivery.
Apr. 14	Broken Bow	Custer County Med. Soc.	Dr. E. S. Wegner Lincoln	Infectious Diseases.
Apr. 18	David City	6th Councilor Dist. Refresher Course	Dr. E. M. Hansen Lincoln	Version, Breech Extraction.
May 2	Seward	5th Councilor Dist. Refresher Course	Dr. Geo. Robertson Omaha	Care of the Newborn.
May 5	Ravenna		Dr. L. E. Dickinson	Cancer.
May 9		Dundy County Med. Soc. Ref. Course	Dr. E. R. Hays Omaha	Health Problems in the School Child.
May 9	Aurora	6th Councilor Dist. Refresher Course	Dr. Earl C. Sage Omaha	Ectopic Pregnancy.
May 9	Denison, Ia.	Crawford County Med. Soc.	Dr. J. D. McCarthy Omaha	Low Back Ache.

J. D. McCarthy, Chairman of Speakers' Bureau.

RADIO ADDRESSES

March 1 to May 15, 1938

Date	Station	Sponsored By	Speaker	Title of Address
Mar. 17	KOIL—Omaha	P. T. A.—Health Committee	Dr. J. Harry Murphy Omaha	Immunization.
Apr. 21	KOIL—Omaha	P. T. A.—Health Committee	Dr. E. W. Bantin Omaha	Why a Pre-School Health Examination.
May 2	KGFW—Kearney KFAB—Lincoln WJAG—Norfolk KGNF—North Platte KGKY—Scottsbluff	Child Health Week Mrs. R. L. Cochran	Dr. L. C. Albertson Dr. E. S. Wegner Dr. G. B. Salter Dr. H. L. Clarke Dr. G. W. Pugsley	Immunization and Control of Contagious Diseases.
May 3	Stations as above	Child Health Week	Dr. C. B. Edwards Dr. F. L. Rogers Dr. A. C. Barry Dr. C. A. Selby Dr. A. L. Cooper	Periodic Health Examination.
May 4	Stations as above	Child Health Week	Dr. C. K. Gibbons Dr. R. H. Whitham Dr. Lucien Stark Dr. J. B. Redfield Dr. J. B. Schrock	School Health Service.
May 5	Stations as above	Child Health Week	Dr. R. F. Jester Dr. George Misko Dr. E. L. Brush Dr. H. A. McDonald Dr. E. E. Griggs	Nutrition and Dental Hygiene.
May 6	Stations as above	Child Health Week	Dr. O. D. Johnson Dr. C. F. Andrews Dr. G. E. Charlton Dr. T. J. Kerr Dr. R. N. Rasmussen	Health Education and Habit Training.
May 7	Stations as above	Child Health Week	Dr. L. W. Stearns Dr. E. M. Hansen Dr. B. R. Farner Dr. E. G. Stevenson Dr. W. C. Harvey	Maternal and Infant Care.

J. D. McCarthy, Chairman of Speakers' Bureau.

VENEREAL DISEASE CAMPAIGN

March 31 to May 4, 1938

Date	Place	Speaker
March 31	Madison Norfolk	Dr. C. C. Tomlinson Omaha
March 31	Osceola David City	Dr. Elmer M. Hansen Lincoln
March 31	Minden Holdrege	Dr. R. E. Harry York
March 31	Sutherland North Platte	Dr. Royal F. Jester Kearney
April 1	Wilber	Dr. L. J. Owen Lincoln
April 1	Ravenna Kearney	Dr. Robert H. Kerr Alma
April 4	Wausa Creighton	Dr. Lucien Stark Norfolk
April 4	Aurora York	Dr. Harold S. Morgan Lincoln
April 4	Gordon	Dr. G. F. Johnston Alliance
April 4	Bridgeport Bayard	Dr. C. M. Pierce Chadron
April 5	Humboldt	Dr. A. A. Conrad Crete
April 5	Ashland Wahoo	Dr. F. Lowell Dunn Omaha
April 5	Deshler Superior	Dr. O. A. Kostal Hastings
April 5	Bassett Ainsworth	Dr. Joseph G. Kruml Ord
April 5	Arnold Gothenburg	Dr. C. A. Selby North Platte
April 5	Cambridge Alma	Dr. H. M. Harvey Gothenburg
April 6	Elgin Neligh	Dr. W. R. Neumarker Columbus
April 7	Laurel Hartington	Dr. Harry W. Benson Oakland
April 7	Crete	Dr. George W. Covey Lincoln
April 8	Harvard Sutton	Dr. W. W. Waddell Beatrice
April 8	Loup City St. Paul	Dr. E. E. Koebbe Columbus
April 11	Emerson Wisner	Dr. O. J. Cameron Omaha
April 11	Spalding Greeley	Dr. P. H. McGowan Columbus
April 11	Oakland	Dr. R. A. Frary Stanton
April 12	Wymore Beatrice	Dr. W. H. Schmitz Omaha
April 12	Rushville	Dr. A. L. Miller Kimball

Date		Place	Speaker
April	12	Gibbon Shelton	Dr. B. R. McGrath Grand Island
April	12	Kimball Sidney	Dr. H. A. Vandiver Ogallala
April	13	Chappell Oshkosh	Dr. Fay Smith Imperial
April	13	Lyman Mitchell	Dr. A. L. Miller Kimball
April	13	Atkinson O'Neill	Dr. George E. Charlton Norfolk
April	13	Lyons	Dr. R. A. Frary Stanton
April	13	Schuyler Central City	Dr. L. A. Swanson Hastings
April	13	Pierce Wayne	Dr. Ernest Kelley Omaha
April	13	Burwell Ord	Dr. A. A. Enos Central City
April	13	Chadron	Dr. A. L. Cooper Scottsbluff
April	14	Wood River Grand Island	Dr. Morris Nielsen Blair
April	14	Cozad Oxford	Dr. E. F. Leininger McCook
April	15	Ponca	Dr. W. J. McMartin Omaha
April	15	Crawford Scottsbluff	Dr. A. L. Miller Kimball
April	18	Weeping Water Pawnee City	Dr. Rufus A. Lyman Lincoln
April	18	Seward	Dr. L. J. Owen Lincoln
April	18	Curtis	Dr. C. A. Selby North Platte
April	19	Tecumseh Auburn	Dr. E. G. Zimmerer Lincoln
April	19	Trenton McCook	Dr. C. A. Selby North Platte
April	20	Wakefield Howell	Dr. Z. N. Korth Omaha
April	20	Clarkson	Dr. J. P. Brown O'Neill
April	20	Genoa	Dr. F. D. Ryder Grand Island
April	20	Fairbury	Dr. K. E. Prescott Tecumseh
April	20	Friend Fairmont	Dr. R. B. Palmer Lincoln
April	21	West Point Stanton	Dr. D. J. Wilson Omaha
April	21	St. Edward Albion	Dr. R. T. Van Metre Fremont
April	21	Humphrey Hooper	Dr. E. E. Farnsworth Grand Island
April	21	Western Exeter	Dr. J. C. Waddell Beatrice
April	21	Clay Center Edgar	Dr. F. W. Buckley Beatrice
April	21	Alliance	Dr. A. L. Cooper Scottsbluff
April	22	Plainview Tilden	Dr. G. L. Tepley Howell
May	4	Merna	Dr. B. W. Pyle Gothenburg

J. D. McCarthy, Chairman of Speaker's Bureau.

THE SOCIETIES

The regular meeting of the **Omaha-Douglas County Medical Society** was called to order by President Wearne, on Tuesday, April 12, 1938, at 8 p. m., in the Medical Arts Auditorium.

The scientific program was opened by Dr. Herman F. Johnson with his case report on "Multiple Fractures with Unusual Complications," discussed by Dr. Chas. P. Baker.

Dr. Willis D. Wright's topic, "The Anemias Associated with Hypothyroidism" was discussed by Dr. F. Lowell Dunn and Dr. John Sharpe.

Dr. Perrin H. Long, of Baltimore, Md., guest speaker of the evening, was introduced by Dr. M. C. Andersen. Dr. Long's subject was "Sulphanilamide."

Meeting adjourned 10:10 p. m.

The **Adams County Medical Society** met in regular session on May 4, 1938, at the Ingleside State Hospital. Following a dinner, which was attended by twenty of the doctors and their wives, Dr. Nielsen took the group on a tour of inspection of the new Psychiatric Hospital. Following this the groups separated for their respective business sessions.

The program consisted of the report of the County Society Delegate to the Annual State Meeting by Dr. Shaw. Discussion of the new Constitution and By-Laws by Dr. Andrews, who was Councilor-elect for the Tenth Councilor District; and a talk on membership by Dr. Rork, who is the present Councilor. Dr. Rork also displayed the cup presented to the councilor district having the highest percentage membership.

W. L. Shaw, M. D., Secretary-Treasurer.

The **Dawson County Medical Society** met at Lexington April 15, Dr. John Fochtman of Cozad presiding. There was a symposium on Cancer, discussed by Drs. H. B. Hunt, Perry Tollman, and Chas. McLaughlin, all of Omaha. Dr. McLaughlin also spoke on Surgery in Children.

The **Custer County Medical Society** met at the Arrow Hotel in Broken Bow April 21. Twenty-eight attended. Dr. E. S. Wegner of Lincoln and Dr. Earl Farnsworth of Grand Island were guest speakers. Mrs. Earl Farnsworth, president of the State Auxiliary, addressed the wives of the physicians in attendance.

The **Eleventh Councilor District Medical Society** met in the Pawnee hotel Monday, April 19, at 6:30 p. m. for a business meeting and dinner.

Dr. C. F. Heider, president of the group, presided. Dr. J. B. Redfield was elected as the nominee for Councilor of the Eleventh District to be certified to the Nebraska State Medical Association which meets in Lincoln April 26.

A discussion of general medical topics followed the business session.

Physicians and surgeons of Lincoln, Keith, Logan, McPherson, Garden, Perkins, and Deuel counties make up this district.

The **Four County Medical Society** had a meeting at Spalding May 5th. Dr. M. M. Sullivan of Spalding was the host and presiding officer of this meeting. Dr. W. J. Arrasmith of Grand Island gave a lecture illustrated with slides on Goitre. The attendance was nearly 100% and the doctors came from the sand hill country from fifty to one hundred miles away.

There was a meeting of the **Platte-Loup Valley** Medical Society at Columbus May 11th. This was about a 100% attendance meeting. The fracture meeting was in charge of Dr. G. W. Sullivan of St. Edward of the N. S. M. A. Fracture Committee. Dr. J. E. M. Thomson of Lincoln gave a very interesting illustrated lecture on "Fractures of the Foot and Ankle." Dr. Fred Ferciot assisted Dr. Thomson with the demonstrations.

HUMAN INTEREST TALES

Dr. F. W. Niehaus of Omaha recently underwent an appendectomy.

Dr. and Mrs. F. A. Brewster of Holdrege are traveling in New Mexico.

Dr. C. D. Howard was recently elected president of the Blair Golf Club.

Dr. F. W. Buckley of Beatrice underwent a major operation early in May.

Dr. O. F. Lang of Falls City visited his mother in Los Angeles early in May.

Dr. M. H. Hepperlin was appointed city physician for Beatrice early in May.

Dr. and Mrs. A. C. Stokes of Omaha vacationed in Excelsior Springs early in April.

Dr. and Mrs. G. G. Douglas of Elmwood vacationed in Excelsior Springs, Mo., in April.

Dr. Robert Williams of Fremont has accepted a residency in the Akron City Hospital.

Dr. M. L. Koser of Nebraska City has been appointed county physician for Otoe county.

Dr. and Mrs. W. H. Scoins of Sierra Madre, California, were recent visitors in Omaha.

Dr. and Mrs. Lynn T. Hall of Omaha have returned from a short vacation in New York City.

Dr. Roy C. Swanson of Wahoo recently attended a Child Health Conference in Kansas City.

Dr. Willis D. Wright of Omaha spent a week in Rochester and Minneapolis in postgraduate studies.

Dr. A. D. Cloyd, Sr., addressed the Good Fellowship Committee of the Omaha Chamber of Commerce on "Mexico."

Dr. Daniel P. McCleary, an Alma product, has become associated in practice with Dr. Leonard A. Swanson of Hastings.

Dr. O. W. French has become associated in partnership with Dr. J. P. Brown of O'Neill. He will retain his practice in Page.

Dr. Paul J. Flory of Pawnee City recently spent some time in Cook County Hospital, Chicago, in postgraduate work on the eye.

Dr. Gordon Whiston, Fellow in Orthopedic Surgery in the University Hospital, Omaha, has been appointed to the Royal Infirmary, Manchester, England.

Dr. T. L. Gritzka, formerly of Talmage, has accepted an appointment with the United States Public Health Service. He is stationed in Portland, Oregon.

Dr. J. M. Erman, State Commander of the Veterans of Foreign Wars, was guest of honor at the annual district V. F. W. conference held in Scottsbluff in May.

Dr. J. A. Burford, superintendent of the State Institution for Feebleminded at Beatrice, attended the annual convention of the American Association for Mental Defectives in Richmond, Va., in April.

Among Nebraskans attending the annual Congress of Physicians in New York last month were: Drs. F. L. Rogers, Harry Flansburg of Linloln, W. P. Wherry, A. E. Bennett, R. D. Schrock, J. D. Bisgard, Edwin Davis, all of Omaha.

We quote this from the Lincoln "Star" of April 26:

Dr. Paul Tipton of Omaha walked off with honors in the doctors' golf tournament, staged as an adjunct of the state medical convention, by touring the Lincoln Country club links in 78. Second low gross score was made by Dr. John C. Peterson of Lincoln, with 81. Additional results:

Low net—Tie between Dr. S. G. Reed and Dr. H. B. Kennedy, both Omaha doctors.

Second low—Dr. J. Moritz, Beatrice.

Third low—Dr. E. E. McMahon of Omaha.

Senior champion—Dr. S. G. Zemer of Lincoln.

Longest drive, No. 1—Dr. H. B. Kennedy.

Closest to pin, No. 5—Dr. J. B. Redfield of North Platte.

Closest to pin, No. 10—Dr. O. M. Troester, Hampton.

Closest to pin, No. 14—Dr. R. P. Westover, Plattsmouth.

Longest drive, No. 17—Dr. Payson Adams, Omaha.

Highest score—Dr. H. N. Morrow, Fremont.

Blind bogey prize—Dr. O. V. Calhoun, Lincoln.

BIRTHS

To Dr. Paul L. Peterson, a daughter, May 7.

To Dr. and Mrs. C. L. Chamberlain of Rushville, a son, May 15.

To Dr. and Mrs. Virgil A. Toland of Fond du Lac, Wis., a son, May 7.

OBITUARIES

Dr. George Emile Neuhaus, Omaha. The doctor was born in Berlin, Germany, and came to this country at the age of 20 years. He graduated from Belleview Hosptial Medical College in 1891. He practiced for a short time in New York whence he moved to Denver to become associated with the Medical College of the University of Colorado, in the Department of Psychiatry. He located in Omaha in 1922 and joined the staff of Creighton Medical School where he was assistant professor of neuropsychiatry.

He died suddenly in his office, from cerebral hemorrhage, May 15, at the age of 72. Surviving are his wife and three daughters.

Dr. Allan J. Cameron, Herman. Born in Canada, 62 years ago, the doctor graduated from the University of Toronto in 1900. He came to Herman that same year and remained there until his death, excepting for a brief period of army service during the World war. Dr. Cameron had been president of the Washington County Medical Society, and vice-president of the Nebraska State Medical Association. He was active in civic and educational affairs.

He died of heart disease May 5. His wife and a daughter survive.

In the passing, on April 10, 1938, of **Dr. William O. Colburn,** the Nebraska Pediatric Society has lost a past president and an honored and beloved member.

Whereas, Dr. Colburn, during the major portion of his life as a physician, devoted himself exclusively to the care of infants and children, giving them whole-hearted, conscientious and arduous service, was beloved and honored by the children and their parents,

And whereas, this Society, realizing its loss, desires to express its admiration of their colleague and emphasize the feeling of distinct personal loss, Be it

Resolved that the members of the Nebraska Pediatric Society offer a tribute to the memory of their co-worker and friend Dr. Colburn, whose distinguished and lovable service will long be remembered by those whom he served.

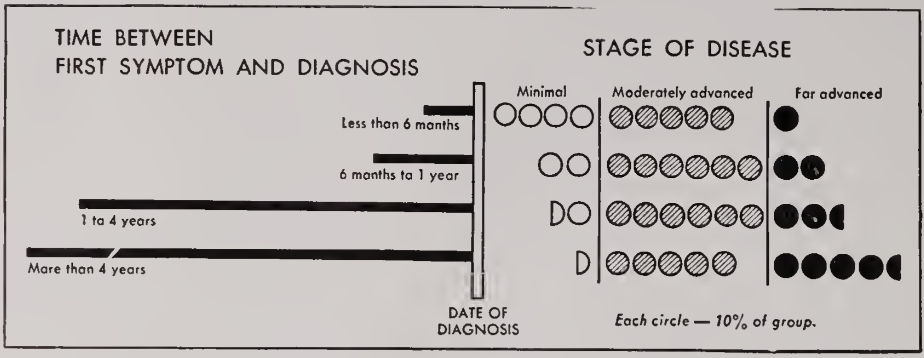
Be it further resolved that these Resolutions be published in the Nebraska State Medical Journal and a copy thereof be forwarded to the members of Dr. Colburns' family.

Dr. Floyd S. Clarke,
Dr. E. W. Hancock,
Dr. Robt. E. Harry.

TUBERCULOSIS ABSTRACTS

FACTORS OF DELAY IN DIAGNOSIS

The responsibility for delay in diagnosis when symptoms are present must be shared alike by the patient and the attending physician. Symptoms of a mild nature often seem negligible in the patient's estimation and thus he postpones medical consultation until more severe symptoms appear.



Based on a study of the experience of 361 patients with tuberculosis made by Ruth A. Sedar. Social Research Series No. 5, National Tuberculosis Association.

The authors offer the following explanations for the failure in diagnosis on the basis of presenting symptoms:

Cough and Expectoration: The diagnosis was not suspected in 38.3 per cent of this group. This was probably due to the tendency on the part of physicians to diagnose prolonged or recurrent coughs as chronic bronchitis or chronic sinusitis.

Loss of Weight and Fatigability: Tuberculosis was not suspected in 50 per cent of these cases. Such diagnoses as nervousness, nervous breakdown, overwork, overindulgence in alcoholics and tobacco, dissipation, and chronic debilitating diseases were offered by the attending physician.

Hemoptysis: "Blood spitting," which has been known throughout the centuries as one of the pathognomonic symptoms of phthisis, was a frequent source of error in diagnosis. Although the percentage of failure (22.1) was less than that in other groups of symptoms, it is still too high. The absence of positive physical findings on examination of the chest probably accounts for such diagnoses as ruptured blood vessel, irritation of throat, and bleeding from nasopharynx.

Pleurisy: When a patient is seen only once, it is difficult to make a diagnosis unless a suspicion of tuberculosis is ever present in the physician's mind and the patient is urged to return for further observation after the acute attack subsides. Idiopathic pleuritis, though it may be accepted by the majority of physicians, should never be used as such until a sufficient interval has elapsed and the lung has remained clinically and radiologically negative. Failure to recognize this has resulted in 40.9 per cent mistaken diagnoses.

Fever and Night Sweats: Climatic and endemic conditions undoubtedly are the source of confusion as regards this symptom complex. With the high incidence of malarial infection in Louisiana, it is little wonder that a number of patients were treated previously with quinine, plasmochin or atabrine. This group leads all others in percentage of error, 73.3 per cent being neither diagnosed nor suspected.

Grippal: The diagnosis was missed in 40 per cent of the group presenting symptoms ordinarily attributed to an acute respiratory infection with or without physical signs of a pneumonitis. The constant occurrence of "flu" epidemics and the failure to realize that bed rest over a short period may render a tuberculous patient asymptomatic are the natural sources of error. As in any of the aforementioned symptom complexes, suspicion of tuberculosis is of prime importance.

Factors Delaying the Diagnosis of Pulmonary Tuberculosis, Louis A. Monte, M. D., and Oscar Blitz, M. D., New Orleans Medical and Surgical Journal, Vol. 90, No. 8, February, 1938.

BOOK REVIEWS

Medical Writing by Dr. Morris Fishbein, Editor of the Journal of the American Medical Association. Published 1938, by The Press of The American Medical Association, Chicago.

The purpose of this handy volume is to assist physicians in the preparation of medical manuscripts intended for publication in the various Journals printed under the auspices of the American Medical Association. It includes a clear and concise discussion of the various elements that enter into the writing of an acceptable paper: subject matter, style, arrangement of copy, literary etiquette involved in quoting other writers, and many other features that differentiate between a well prepared and a poorly prepared manuscript. Particular emphasis is placed on such important, yet neglected rules of grammar and simple rhetoric which in so many instances determine the fate of a paper on the editorial desk.

Needless to say this book is written in the usual Fishbein mood, and makes delightful reading. The price is $1.50.

"The Diagnosis of Syphilis by the General Practitioner" by Joseph Earle Moore, M. D. Published by U. S. Public Health Service. This booklet, according to the author, was written in response to dozens of inquiries and letters from physicians asking for advice on problems of diagnosis.

Case-finding and case-treatment, writes Doctor Moore, represent the physician's share in fighting syphilis. "On the whole, experience has convinced me that in spite of all present-day shortcomings, the treatment element is better performed than case-finding. . . . . That a decrease in the incidence of syphilis is not yet apparent is due, I believe, largely to the fact that so many syphilitic patients pass completely unrecognized until the damage of infection of others or the ultimate break-down of the individual has already occurred."

Doctor Moore's booklet is divided into the following chapters, "The Diagnosis of Syphilis: General Considerations," "The Diagnosis of Early Syphilis," "The Diagnosis of Latent, Prenatal, and Congenital Syphilis," and "The Diagnosis of Late Syphilis."

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THE TREATMENT OF ADVANCED MALIGNANCY*

ALBERT F. TYLER, B. Sc., M. D.,
Omaha.

The constant problem of the therapeutic radiologist is the treatment of cases of advanced malignancy; so far advanced that sharp knife surgery is out of consideration because of involvement of a vital organ, because of location where removal is impractical or because of extreme vascularity.

This type of patient must be treated either by radium, x-ray or electrosurgery or by a combination of these agents. Most cases can be treated by radiation, combining x-ray of the high voltage type with radium. As knowledge and experience accumulates certain rather definite lines become apparent for each type of patient. All tumors so located that any kind of surgical attack is impossible must be treated by radiation alone. Patients afflicted with tumors where the best cosmetic effect is desirable are best treated by radiation. Tumors which are definitely radiosensitive, such as the lymphoblastomas, certainly belong to the field of radiation. Patients who have some complicating constitutional disease which excludes surgical interference must be treated by radiation alone.

In a small percentage of patients with spindle cell sarcoma of bone—fibrocellular sarcoma—the use of x-ray to the point of deliberate soft tissue destruction seems justified in order to save an arm or a leg to usefulness and incidentally to save the life of the patient. Bone, so treated, retains enough vitality to regenerate and become strong enough for use though deformed. Before undertaking such a course of treatment, in America at least, the patient must be fully informed and give the radiologist consent to go ahead. After consent has been given, the radiologist must go through the course of treatment and recovery with the patient, giving proper guidance and encouragement. The period of care usually covers many months. The record of a patient suffering with sarcoma of the humerus, treated by such a method and still well ten years after treatment, is herewith presented.

Case No. 29856. S. F., 17 years, September 23, 1937. Referred by Dr. J. P. Lord.

History: The patient stated that during the past eight months she had noticed pain followed by swelling of the left arm near the shoulder.

Physical examination showed a large soft tissue swelling involving the upper half of the left arm which x-ray films proved originated from an expansile type of bone tumor with destruction of the upper part of the humerus. Fig. 1.

The diagnosis of sarcoma was justified and radiation advised. Radium element packs were used externally and radium element capsules were inserted into the tumor mass. This was followed by 100 per cent E.S.D. of 200 K.V. X-ray, resulting in breaking down the kin and underlying mass.

Repair occupied two years during which time several sequestra were removed. Bone reformed assuming roughly the contour of the normal humerus. Fig. 2.

The patient regained good function although the skin is scarred and marked with telangiectases. The young woman is well with no metastases and is working as a stenographer. Fig. 3.

The record of another patient suffering from sarcoma of the scapula where x-radiation was combined with surgery, is given, the patient being still well and free of disease eight years since treatment.

Case No. 34853. M. M. B., 35 years, October 7, 1929. Referred by Dr. Edwin Davis.

History: The patient stated that during the latter part of 1927 she noticed a lump under the right arm back toward the shoulder blade which slowly grew to the size of a hen egg. In February 1928 this was removed, an uneventful recovery occurred but in about eight months the growth had recurred. In December 1928 a second operation was done at which time a part of the shoulder blade was removed as well as the tumor.

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*Read before the Omaha Mid-West Clinical Society, October 21, 1937.

Physical examination showed two semilunar scars over the right scapular region with a palpable subcutaneous mass 2.5 cm in diameter between the two scars. X-ray films showed the lungs clear, the inferior half of the right scapula not present and the remaining portion normal in appearance.

Treatment: During the months of October and November, 1929, fourteen x-ray treatments were given using the following factors: 140 K.V., 6 mm al. filter, 25 cm distance totaling 6 E.S.D. The mass receded but returned in February 1931, when it was excised again by Dr. J. P. Lord. Since then there has been no further recurrence. The patient is still well six and one-half years since treatment and does her own housework. Fig. 4.

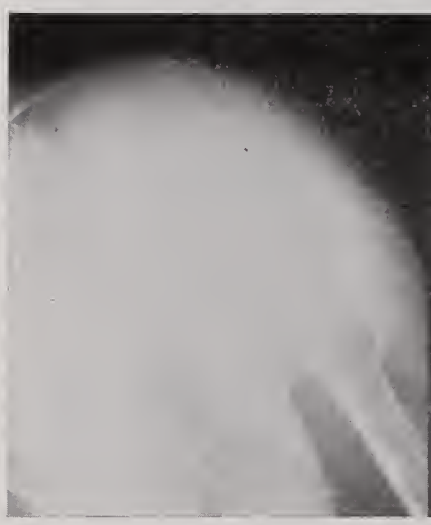

Fig. 1. S.F. X-ray film showing destruction of the upper humerus by an expansile type of sarcoma.

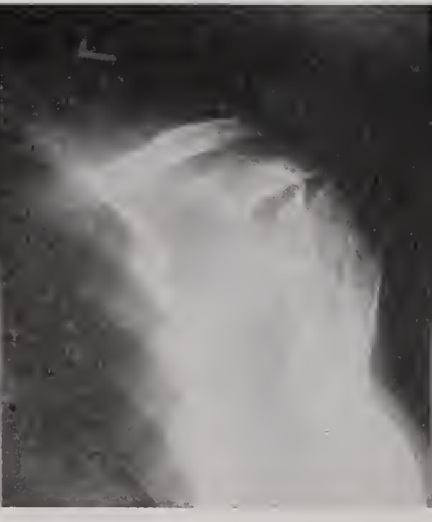

Fig. 2. S.F. X-ray film of humerus after healing has occurred following destructive radiation dosage.

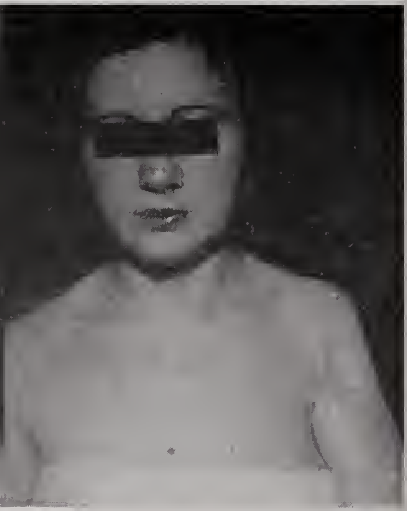

Fig. 3. M.M.B. Photograph of patient 8 years after treatment.

In squamous cell carcinoma of the oral cavity combined methods are often indicated especially where bone is involved. In our experience the use of x-ray externally and radium internally combined with electrocoagulation gives the best results. Seldom have we been able to eradicate the disease by radiation alone when bone was involved. Coagulation of the palate through into the antrum or nasal cavity or coagulation of the mandible can be done where indicated. The coagulated bone comes out as a sequestrum and the tissues recover as fully as possible. The following record shows results in a patient with squamous cell carcinoma of the floor of the mouth involving the mandible, treated by radium and 200 K.V. x-ray with loss of the mandible from angle to angle, alive and working ten years after treatment was instituted.

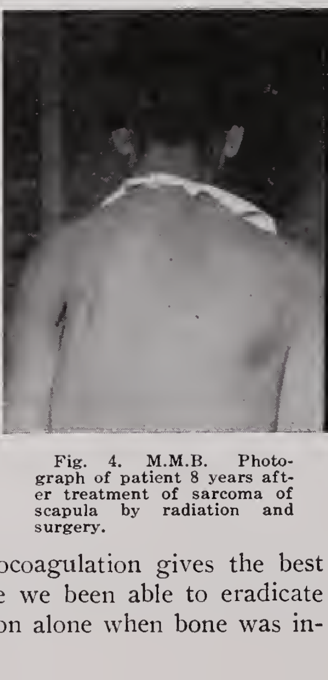

Fig. 4. M.M.B. Photograph of patient 8 years after treatment of sarcoma of scapula by radiation and surgery.

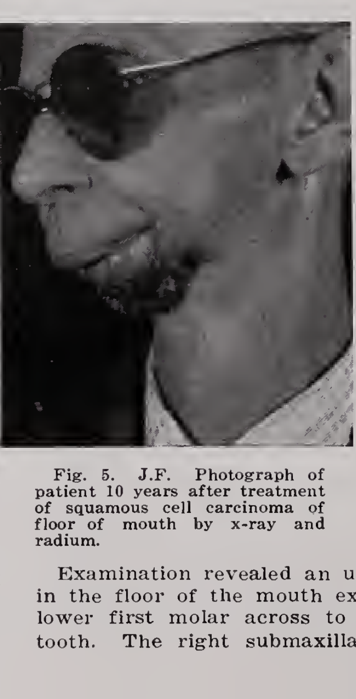

Fig. 5. J.F. Photograph of patient 10 years after treatment of squamous cell carcinoma of floor of mouth by x-ray and radium.

Case No. 28977. J. J. P., 45 years, May 10, 1927. Referred by Dr. F. J. Schleier.

History: The patient stated that about three weeks previously he had noticed something wrong with his mouth under the tongue.

Examination revealed an ulcerated indurated area in the floor of the mouth extending from the right lower first molar across to the left lower cuspid tooth. The right submaxillary lymph glands were palpable. Blood Wassermann test was negative. Diagnosis of squamous carcinoma was made.

Radium needles, each containing 12.5 mg. radium element, were inserted into the tumor in the floor of the mouth in such arrangement as to give 100 mg. hrs. dosage to each cubic centimeter. As soon as the reaction from this treatment had subsided x-ray treatment was given with 200 K.V., 1 mm cu and 1 mm al filter, 50 cm distance, 800 r units on each side of the affected area. Radium element pack was applied to the floor of the mouth on three occasions with 150 mg. hrs. dosage. In one month 800 r x-ray was applied to the right side of the jaw and 1600 r to the left side using the same factors as above.

The growth disappeared but the involved mandible gradually separated as sequestra which were removed from time to time during the two years following. Healing occurred with the ascending rami only remaining. The patient is still well and working ten and one-half years after first seen. Fig. 5.

Sarcomas of the tonsil are radiosensitive and when seen early can be cured by radiation alone, preferably high voltage x-ray used externally.

Case No. 45184. M. N., 60 years, July 30, 1935.

History: The patient noticed a swelling of the right tonsil in March 1935, which grew rapidly until it filled the throat so much that swallowing and speaking were difficult. In june 1935 he noticed a lump on the right side of the neck.

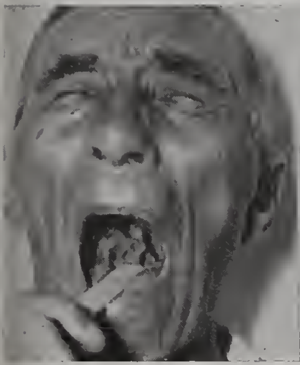
Fig. 6. M.N. Sarcoma of right tonsil.

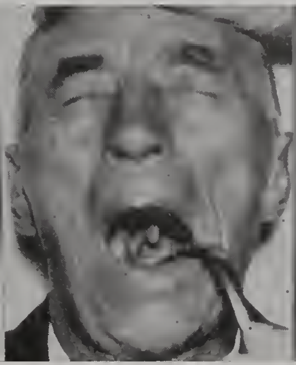
Fig. 7. M.N. After treatment by x-ray only.

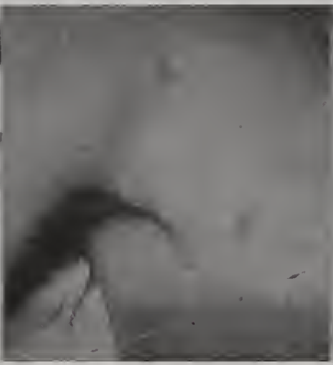
Fig. 8. S. D. Photograph 22 years after treatment of inoperable sarcoma of right axilla by x-ray only.

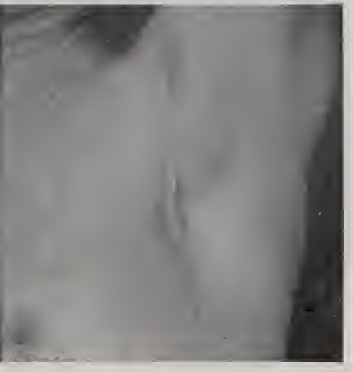
Fig. 9. S. B. P. Photograph 9 years after treatment of sarcoma of left axilla and right iliac fossa by x-ray only.

Examination showed the right tonsil occupied by a new growth which was not ulcerated, so large it extended well beyond the midline of the pharynx pushing the uvula to the left. Fig 6.

On the right side of the neck just below the ear was an enlarged lymph gland about 7 cm in diameter. A diagnosis of sarcoma, primary in the tonsil, with metastasis to the right lymph gland, was made.

X-ray treatments were given daily using 200 K.V., 0.5 mm cu filter, 50 cm distance with a total dose of 3400 r on the right side and 1200 r on the left side. The tonsil and the metastatic lymph gland rapidly decreased until normal in appearance. Fig. 7. There have been no signs of recurrence or metastasis to date two years after treatment.

Lymphosarcoma can be reduced very quickly by x-radiation alone but often the tumor has already metastasized to distant parts and eventually causes the death of the patient. Occasionally a patient is seen before metastases have occurred, then the patient can be cured and remain free of the disease.

Case No. 7320. S. D., 7 years, March 9, 1915. Referred by Dr. F. J. Schleier.

History: A few months ago the boy complained of a swelling under his right arm. Two weeks ago the parents took him to the physician. Surgical excision was attempted but found impractical because the tumor surrounded the axillary vessels. Biopsy proved the mass lymphosarcoma.

When he presented himself for x-radiation the mass was the size of an orange pushing the pectoral muscle forward. Sixteen x-ray treatments were given using 140 K.V. 6 mm al filter, 25 cm distance, 200 r per treatment. The mass rapidly disappeared and the patient is well twenty-two years since treatment. Fig. 8.

Case No. 31093. S. P. B., 67 years, March 23, 1928. Referred by Dr. C. C. Impey.

History: For several months, in the left axillary region, the patient had noticed a lump which gradually increased to the size of an orange. The tumor was removed January 26, 1928, and proven lymphosarcoma. It recurred at the site of removal in one month.

During the following twelve months, twenty-nine x-ray treatments were given over the left axillary and supraclavicular region using 140 K.V., 6 mm al filter, 25 cm distance, 300 r per treatment. The local tumor disappeared but May 23, 1929, a massive metastasis was found in the right iliac fossa. This was treated using 200 K.V., 5 mm cu, 50 cm, 800 r units anterior, 800 r units posterior. This mass disappeared and the patient is still well nine and one-half years after beginning radiation therapy. Fig. 9.

In our hands the chief value of radium has been in body cavities, to get more uniform distribution of dosage in some tumors, to take care of metastatic lymph glands or where x-ray has reached a stalemate. The latter use suggests a slightly different biological effect between the x-ray and radium since occasionally one sees a tumor which, at first, responds to x-radiation but a residual area persists in spite of heavy doses. In these cases radium treatment often produces further recession.

Electrosurgery as advocated by the late Wm. L. Clark and Geo. E. Phahler of Philadelphia, has a definite place in the treatment of advanced malignancy. The long wave damped type of electric current from the spark gap high frequency machine producing coagulation of tissue is especially useful. With this current massive growths, too vascular to permit removal by sharp knife surgery or the cutting current electrosurgery, can be removed without any bleeding and without the use of a single ligature. Vascular spaces with little delimitation and blood vessels 0.5 cm in diameter can be coagulated by using a technique which coagulates the blood before the space or vessel is opened. Flowing blood dissipates the heat and makes proper coagulation impossible. In this type of tumor two pointed electrodes are used placing their points in contact with the surface about 2 cm apart. The current is then turned on and as coagulation takes place between the two electrodes they are gradually pushed deeper into the tissue until reaching the depth desired. The two electrodes are then removed and moved to an adjacent position where the process is repeated. This scheme is repeated until the base of the tumor has been surrounded by a line of coagulated tissue. Gentle traction is then applied separating the tumor from its bed along the coagulated area. If the size of the tumor is so great that going once around does not complete the coagulation, then the process is repeated, following the bottom of the previous groove. The tissue between the electrodes should be cooked until grayish color and soft with no bleeding but should not be charred. By this method the electrodes do not become fouled by tissue adhering to them as they do when working in free blood. Not only is this technique bloodless and ligatureless but there is almost no after pain.

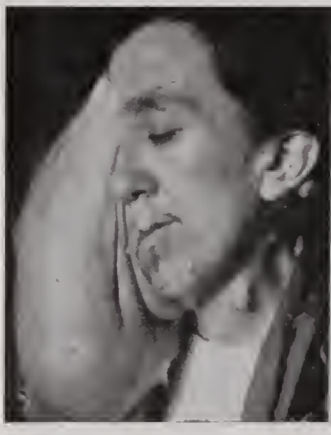

Fig. 10. A. M. Medial aspect of large neurofibroma.

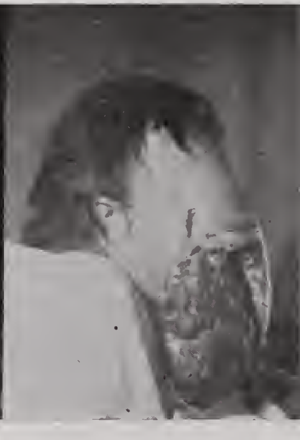

Fig. 11. A. M. Lateral aspect of large neurofibroma.

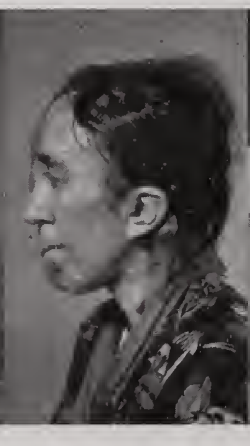

Fig. 12. A. M. After removal by electrocoagulation and epidermization.

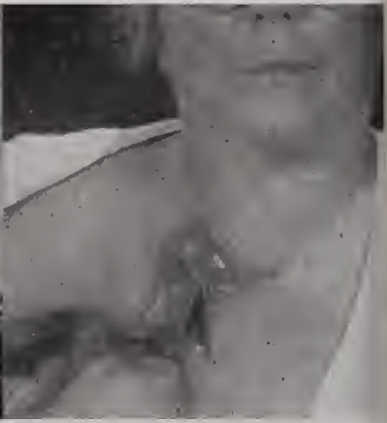

Fig. 13. Mrs. T. I. Ulcerating adenocarcinoma involving ribs and sternum removed by electrocoagulation.

The deep circulation is unharmed so that as soon as the coagulum has separated off healthy granulations spring up and epidermization takes place in the shortest possible time. If the area is too large for epidermization to take place from the margins, skin grafts can be made as indicated. In this manner the recovery period is greatly shortened.

The employment of electrocoagulation is indicated when the growth is large, ulcerating and foul smelling, the treatment gets rid of this condition at once.

Case No. 39095. A. M., 33 years, November 10, 1931. Referred by Dr. Lloyd Ragan.

History: Instrumental delivery at birth injured the right orbit and eye so that the eye was removed at three months. At five years, tumors began to develop all over the body. At fifteen years of age a blood vessel in the right side of the neck was tied off and an attempt made to remove a tumor from the right supraorbital region. The tumor slowly grew larger and in March, 1931, an attempt was made to remove it surgically but abandoned because of hemorrhage. The tumor at once took on rapid growth until by November 26th, 1931, it was 45 cm long by 25 cm wide and 20 cm thick. Fig. 10. The outer side was ulcerated and bleeding. Fig. 11. The tumor proved to be neurofibroma.

Under Avertin anesthesia the entire mass was removed by electrocoagulation using the two pointed electrode technique described above. Healing rapidly occurred with complete epidermization. Fig. 12.

In some cases, even where ulceration has not occurred, such as epitheliomas around the ear, the pain is excruciating and continuous, exhausting the patient. Here immediate relief is obtained by removal by coagulation.

Where massive growths are located so that radiation would affect organs under the growth deleteriously, then electrocoagulation removal is advisable. This is true in cancers involving the chest wall, over the lung, liver or spleen, or on the abdominal wall.

Case No. 47745. Mrs. T. I., 47 years, December 7, 1936.

History: The patient had noticed an ulcerated growth on the right upper chest wall about three years. An attempt at removal had been made two years ago, followed by four or five x-ray treatments of undetermined dosage. The growth reappeared soon and became ulcerated in May 1936, gradually enlarging until, when seen by us, the upper right anterior chest wall from above the clavicle down to the fourth rib and from the midsternal region to the anterior axillary line was involved. Fig. 13. The mass was fixed to the chest wall, was painful and foul swelling. Under Avertin anesthesia, the mass, which proved to be adenocarcinoma, was removed by electrocoagulation including the anterior surface of the sternum and the ribs. The operation was bloodless and no ligatures were used. Practically no after pain was had.

The ribs and sternum came away as sequestra, the wound filled in and partial epidermization occurred.

In carcinomas of the mouth or chest wall, where bone or cartilage is involved, electrocoagulation removal offers a better chance of getting rid of the tumor and shortens the period of recovery.

In tumors known to be radioresistant surgical removal by the sharp knife is advisable, where possible, but if impossible by sharp knife then electrocoagulation can be employed. In sarcomas arising from the fascia the sharp knife can be used to incise the overlying skin and the cutting or coagulating electric current, as indicated, can be used to dissect out the tumor and attachments. The advantage of this combined technique is less danger of dissemination and at the same time primary union of skin is obtained.

In our experience high voltage, heavily filtered, x-ray applied in daily fractional doses is the greatest therapeutic agent for treatment of advanced malignancy and when supplemented by radium will give most patients much help, relieving pain, and causing recession of the growth. In a small selected group of patients, x-ray and radium should be supplemented by electrocoagulation. When properly used no other agent can compare with its benefits.

By using a combination of these agents, the greatest benefit can be given to patients suffering from advanced malignancy, helping many and curing a few. May this give us courage to continue the battle!

SURVEY OF CANCER OF BREAST

At St. Elizabeth's Hospital 1928 to 1938

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Seventy-two patients were admitted to St. Elizabeth's Hospital for treatment for cancer of the breast from Jan. 1, 1928, to Jan. 1, 1938. The diagnosis of these breast tumors was confirmed by a pathologist. It will be assumed that the purpose of this survey is to aid in the clinical search for a reasonably certain method of preventing the loss of health and life of patients as a result of cancer of the breast. With this concept my analysis has been confined to the study of two groups of patients, namely, those who are alive and those who are dead. And the study of these two groups has been restricted to the grade of the disease at the time of treatment, the length of time alive after treatment and the treatment used.

There are recognizable and measurable degrees of development of cancer of the breast, clinically applicable, which may be rationally classified as Grade I, Grade II, and Grade III. I have chosen to use this classification.

In grade I, the tumor is circumscribed; confined to the lobular portion of the breast; is freely movable; integumentary structures are not affected; the axillary glands are not definable; there are no objective symptoms and there may or may not be any localized subjective symptoms.

In grade II, the tumor may or may not be confined to the lobular portion of the breast; the integumentary structures may be affected; the tumor is movable; the axillary glands are definable; there may be localized objective symptoms and there are localized subjective symptoms.

In grade III, the tumor is not circumscribed to the lobular portion of the breast; integumentary structures are invaribly affected; the muscles are probably effected; the tumor is not movable; the axillary glands are definable; there may or may not be discoverable regional metastasis; there are definite localized objective and subjective symptoms and there are usually systemic objective and subjective symptoms.

In conformity with the accepted custom, a "five year" period has been used as a basis for time, "surgical removal" has been assumed to constitute the operative technique and the term "other treatment" has been used to embrace x-ray, radium and palliative measures.

ANALYSIS—EMBRACING

Physicians, Patients, Grade and Results.
(To maintain professional ethics a code number to designate each physician has been used instead of the physician's name.)

Doctor's Code Number	Number of Patients	GRADE I Alive End of 5 Yr. Period	GRADE I Dead End of 5 Yr. Period	GRADE II Alive End of 5 Yr. Period	GRADE II Dead End of 5 Yr. Period	GRADE III Alive End of 5 Yr. Period	GRADE III Dead End of 5 Yr. Period
1	1	..	1	..	..	..	..
2	7	2	..	1	1	1	2
3	5	1	1	1	1	..	1
4	9	1	1	3	2	..	2
5	2	1	..	..	..	..	1
6	3	..	..	..	..	..	3
7	4	..	..	1	3	..	..
8	3	1	..	..	..	..	2
9	7	1	..	2	3	..	1
10	1	1	..	..	..	..	..
11	1	..	..	..	..	..	1
12	1	..	..	..	..	..	1
13	4	2	..	..	..	..	2
14	5	1	..	2	1	..	1
15	1	..	..	..	..	..	1
16	1	..	..	..	1	..	..
17	4	..	..	1	2	..	1
18	1	..	..	1	..	..	..
19	6	1	1	..	2	..	2
20	1	1	..	..	..	..	..
21	1	1	..	..	..	..	..
22	1	..	..	..	..	..	1
23	1	..	..	..	..	..	1
24	2	1	..	..	1	..	..

ANALYSIS—Seventy-two Records

(Form 21 A. C. S.)

GRADE I

Number of Patients 19	Number Alive 15 — 79%					Number Dead 4 — 21%				
Surgical Removal and other treatment.	Years elapsed since treatment.					Year of death after treatment.				
	1	2	3	4	5	1	2	3	4	5
Tumor only	1	..	3	..	..	..	1	..	..	..
Tumor, Postoperative x-ray	..	1	1	..	..	..	..	..	..	..
Breast only	2	..	..	..	2	..	..	..	..	..
Breast and Axillary glands	..	..	..	..	1	..	1	..	..	..
Breast and Pectoral Muscles, Axillary glands	2	..	..	..	..	..	..	1	..	..
Breast, Pectoral Muscles, Axillary glands, Postoperative x-ray	..	1	..	..	1	..	..	1	..	..

GRADE II

Number of Patients 29	Number Alive 12 — 40%					Number Dead 17 — 60%				
Surgical Removal and other treatment.	Years elapsed since treatment.					Year of death after treatment.				
	1	2	3	4	5	1	2	3	4	5
Breast and Axillary glands	1	..	..	..	1	..	3	1	..	..
Breast, Axillary glands, Postoperative x-ray	..	..	..	..	1	..	1	..	..	..
Breast, Pectoral Muscles, Axillary glands	..	1	..	..	2	3	2	1	1	..
Breast, Pectoral Muscles, Axillary glands, Postoperative x-ray	3	..	2	..	1	..	2	..	1	..
Breast, Pectoral Muscles, Axillary glands, Preoperative, Postoperative x-ray	..	..	..	..	..	..	1	..	..	..
Breast, Pectoral Muscles, Axillary glands, Postoperative x-ray and radium	..	..	..	..	..	1	..	..	..	..

GRADE III

Number of Patients 24	Number Alive 1 — 4.35%					Number Dead 23 — 95.65%				
Surgical Removal and other treatment.	Years elapsed since treatment.					Year of death after treatment.				
	1	2	3	4	5	1	2	3	4	5
Breast, Axillary glands, Postoperative x-ray	..	1	..	..	..	1	..	..	..	..
Breast, Axillary glands, Preoperative, Postoperative x-ray	..	..	..	..	..	..	1	..	..	..
Breast, Pectoral Muscles, Axillary glands	..	..	..	..	..	3	6	..	..	..
Breast, Pectoral Muscles, Axillary glands, Postoperative x-ray	..	..	..	..	..	1	1	1	..	1
Breast, Pectoral Muscles, Axillary glands, Postoperative x-ray and radium	..	..	..	..	..	..	1	..	..	..
X-ray only	..	..	..	..	..	3	..	..	..	..
Radium only	..	..	..	..	..	1	..	..	..	..
Palliative Medical	..	..	..	..	..	2	1	..	..	..

CONCLUSIONS

These patients were treated by Doctors Finney, McKinnon, Hollenbeck, Finkle, Graham, Everett, Welch, Andrus, Bowman, Hilton, Johnson, Rider, McCarthy, Emerson, Arnold, Becker, Olney, Reese, Angle, Lewis, Carveth, Fenton, Frey and Zimmerer. These physicians are comparable to any corresponding number of physicians in any community, and yet, the fact remains, no two of them had nor have the same capacity or technique.

Variable factors in a calculation produce conjectural equations. Twenty-four physicians and seventy-two patients constitute ninety-six variables which, even if there were no others, preclude any reasonably certain conclusions. But, this does not rob the report of some practical clinical value. Although no factual evidence is present to support the superiority of any one method of surgery, with or without supplementary non-surgical measures, used in the treatment of these patients, there is strong evidence to support the conclusion that the "when" of what was done was of more consequential value than "what" was done. Which is one way of saying an ounce of prevention of known value is worth any quantity of speculative cures.

DOWN AND UP

(Montreal Star)

A lawyer said to a doctor witness, "Doctors make mistakes sometimes, don't they?"

"Just as lawyers do sometimes," was the answer.

"But doctors' mistakes are buried six feet under ground," persisted the lawyer.

"Yes," agreed the doctor, "and lawyers' mistakes sometimes swing six feet in the air."

AVITAMINOSIS AS A LIKELY ETIOLOGICAL FACTOR IN POLYNEURONITIS COMPLICATING PREGNANCY: REPORT OF CASE

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The object of this communication is two fold: first, a plea for clinical and pathological studies of the nervous system in vomiting complicating pregnancy; second, to report observations made on the nervous manifestations in a fatal case of vomiting of pregnancy, and, based on a similarity of these manifestations and pathological sections (polyneuritis) to Beri-beri, Korsakow's syndrome, pellagra, etc., (Fig. 1-a, 1-b. 2-a, 2-b), to suggest vitamin B complex* lack as an etiological factor in this disease complex. These observations we hope may prove to be of some value in the constant effort which is being made to clear up this ever perplexing problem.

Berkwitz and Lufkin's(1) report in a very complete summary of somewhat similar cases collected from the literature numbering over 500 and dating back as far as 1854. Of this group only 56 cases were typical, four of which were personal cases reported in detail. Regardless of the fact that the uterus was emptied in all four cases —three artificially and one spontaneously—the disease progressed to a fatal termination in three out of the four cases (75% mortality). In their conclusions they suggest abortion as soon as neurological symptoms appear. Plass(2) reported eight personal cases in detail with an 85% mortality. Seven of the eight cases died. The uterus was emptied in 5 cases, in four of which the disease progressed to a fatal termination. The fifth was improving at the time of the report.

A study of these cases shows that, if the nervous element of the disease is advanced, abortion is of no avail, definitely indicating that some concomitant etiological factor exists in addition to the pregnancy, or that some complication develops as a sequela of the disease or from some short coming in the treatment during the pernicious vomiting of pregnancy.

REPORT OF CASE

E. G., married, age 31 years, all, well proportioned, weight 210 pounds, Para III. First pregnancy complicated by vomiting; spontaneous abortion at two months. Second pregnancy spontaneous delivery at 7½ months, living child now 8 years old.

Previous history and family history negative.

I first saw the patient in February, 1931, with no complaint except inability to conceive. The physical examination, including complete blood count, Wassermann and urine, was negative except for a 3+ erosion of the cervix with a profuse discharge. Air insufflation was positive. Hystero-salpinogram refused. Cauterization was advised but because of nervousness she postponed it until September, 1931. She menstruated once after the cauterization. Result of cauterization excellent. January 13, 1932, she reported, stating she had not menstruated since November 16th and was vomiting a great deal and had several small ulcers in her mouth. She had lost 20 pounds. Her blood pressure was systolic 130, diastolic 75, temperature 98.6, pulse 90. The urine was negative.

The ulcers were touched with silver nitrate, 10%. General prenatal advice was given with suggestions in regard to the nausea, and elixir luminal-drams 1 q. i. d., 15 minutes a. c. was ordered.

The nausea persisted, gradually growing more severe. There were complete remissions of 24 and 48 hours during which time large quantities of water were taken. Each time it seemed she had turned the corner and the period during which nausea might be expected was past. There would be some temporary improvement followed immediately by a severe increase of nausea, and marked restlessness and irritability. After one of these remissions during which there was an intake of some food and 3600 c.c. of liquids a day for two days she became hysterical and complained of extreme weakness. She retched until she brought up blood. Her condition became so severe it was necessary to hospitalize her (March 16th). She was well past her third month of pregnancy.

The physical condition showed marked recent loss of weight—50 pounds.

Treatment consisted of isolation, nothing by mouth, hypodermoclysis and intravenous saline and glucose to protect and build up the glycogen reserve of the liver as originally suggested by Titus(3). In addition she was given luminal sodium hypodermically, grains 1½ q. i. d. as originally suggested by the writer(4).

Pulse 84, temperature 99.6, respiration 20, very irritable and nervous. Two emeses of greenish fluid. Intake 3000 c.c. Elimination 800 c.c.

March 17. Highest temperature 99.2, pulse 96, R 22. Medication same. Intake 2500 c.c. by hypotermoclysis and intravenous injection of 10% glucose and saline. Elimination 900 c.c. 1 emesis. Generally improved. More cooperative.

March 18. Highest T. 99, P. 108, R. 20. Liquid diet, hypodermoclysis continued. Intake 5200 c.c. Elimination 1900 c.c. 5 small emeses.

March 19. Highest T. 98.4, P. 96, R. 22. Emeses 5 times in increasing amounts. Treatment same.

March 20. Highest T. 98.6, P. 88, R. 20. Emesis more severe—4+. Nothing by mouth. More restless. Luminal sodium supplimented with sodium bromide gr. 90 per rectum.

March 21. No decided change. Elimination 2800 c.c. More restless. Very whiny talk.

March 22. Duodenal tube passed. 1800 c.c. liquid diet per tube. Orange juice, broth, lactic acid milk and cream, water and glucose. (Note the vitamin containing food and note the result.

March 23. Same treatment—much improved.

March 24. Same treatment, much improved. T. normal, P. 100. Tube removed. Patient fed by mouth and retained all food and medicine, but a decided anorexia persisted. Luminal sodium gr. 4, q. i. d. The vomiting of pregnancy was relieved as a result of the employment of our modern methods of treatment, but the vitamin deficiency in this therapy as commonly employed must be acknowledged.

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*Vitamin B complex refers to the complex containing Vitamin B1, the anti-neuritic vitamin, and Vitamin B2, the antipellagra vitamin.

March 31. The patient had passed the 17th week of pregnancy. Fetal heart sounds and movement were definitely audible with the head stethescope. The patient left the hospital, eating fairly well, no emesis, weak but walked about. Nervousness almost subsided.

Laboratory: Daily examinations of urine were negative after the 4th day in the hospital and remained negative. RBC—4,170,000, Hgb. 90%, WBC—10,800, polys 70, lymphs 30. BMR—+20, a normal rise for pregnancy. The test was repeated with the same result. The metabolic rate was taken because of persistant tachycardia, extreme irritability and dry scaly skin. The Wassermann was negative.

Neurological examination: Practically negative except for weakness and hypersensitivity. All reflexes hyperactive, also hyperesthesia of skin. Some tenderness in leg muscles, especially of calves. No pain. Leg extension and leg raising good. There was a constantly increasing flaccidity of the muscles. The calves hung down like bags of water. Speech whiney and thick.

April 3. Anorexia more marked. There was little or no nausea. Weakness increased and by April 9th vision was not as good. Speech less clear. Tachycardia more pronounced. Numbness of feet thought

April 11. Very confused. Speech understood with difficulty. Extreme tenderness in lower legs and thighs. Flaccidity of muscles increasing. Fair strength in hand clasp. Knee reflexes gone. Unable to get out of bed. Didn't know time of day or day of week. Recognized people with great difficulty. Had due to luminal sodium.

April 10. Confused—restless +4, slept poorly. Anorexia +4. Vision poor. Skin very dry.
a staring expression. Lost control of rectal and bladder spincters.

Physical examination revealed nystagmus both perpendicular and transverse. She held her eyes half closed, giving a squint-like appearance, like a devitaminized animal. Tongue thick and red and dry, of granular appearance. Reflexes of upper extremities normal. Knee jerks gone. She cried out when her legs were touched or an attempt was made to raise them to test for knee-jerks. These was no clonus, Babinski or Oppenheim.

April 13. A diagnosis of polyneuritis was made and Dr. George Neuhaus was asked to see the case. He confirmed the diagnosis and because of the findings advised administration of vitamin B1 (antineuritic)(5). Brewer's yeast was given in doses of drams 2 q. i. d. (Rice polishings** as prepared by Seidelt's method(6) could not be procured.) At the end of 36 hours the tenderness was almost gone from her legs, but she could not raise her legs from the bed. The hyperesthesia had subsided. Her eyes appeared quite normal. She said she felt better, but the heart rate had reached 130. It was impossible to get her to swallow sufficient liquids. Her tongue was so swollen that it filled her mouth. She was dehydrated and it was deemed necessary to get her back into the hospital. She became unable to retain the yeast.

She was seen by Dr. Earl Sage April 16th and through his help she entered the University hospital. Examination by Dr. Stokes of the eye grounds: Right eye—definite blurring of disc margin but no elevations. No hemorrhage or exudate. Vessels normal. Left eye—narrow flame hemorrhage between superior temporal artery and vein; 1 disc diameter long and twice the width of the vein, 1 dise diameter out from the nerve. No definite blurring of disc or other changes.

April 17. Blood count: Hgb. 72%, RBC—3,960,000, WBC—8,600, polys 83, lymphs 12, mononuclears 5. Urine—Sp. gr. 1022, albumin 0, sugar +4, acetone sl. tr. WBC 1 or 2. Blood Wassermann negative.

Blood Chemistry: N. P. N. 30.1 mgm. %. Chloride 497 mgm. %.

Lumbar puncture: Pressure 6 mm. Hg. Spinal fluid Wassermann .1- .2- .4- .8-. Protein 10 mgm. %. Cell count 2. Uric acid 3.7 mgm.%, Serum N. P. N. 23.4 mgm. %, Total serum albumin 4.7 mgm. %, Cholesteral 176 mg. %.

Throat negative for diphtheria, etc. Teeth negative.

Blood pressure: Systolic 135, diastolic 70. T. 99, 100° at 2 and at 4 a. m. 103. Pulse 160. Lower extremities flaccid.

The patient's condition rapidly grew worse in spite of administration of quantities of glucose and saline by vein and under the skin. She died April 18th.

Autopsy: All gross findings were negative. Sections of liver, kidney, and spleen were negative. Gross examination of nerves was negative.

It was definitely observed throughout the illness of the patient that when her system was flooded with large quantities of water and glucase, which of course are vitamin-free she showed a temporary improvement followed immediately by an exaggeration of symptoms unless vitamin containing nutrition was administered with the water and glucose. This observation is in close keeping with Cowgill's(7) work in which he has pointed out that the expression "toxemia" is drawn into service at present as an explanation for a variety of manifestations of disease for which no clearer interpretation is available. Startling cures that occur following the administration of vitamins to so-called polyneuritic pigeons, in which nerve degeneration can be demonstrated so readily, can hardily be explained as due to sudden correction of the degenerative changes in nerves. This has led many of the investigators to favor the idea of toxemia from toxins injected with food or from faulty metabolism. One of the methods supposed to relieve such a condition consists in "washing out" the system by liberal intake of water and producing a vigorous diuresis. This process is sometimes accelerated by the parenteral administration of fluids. The plan has been put to the test in the laboratories at Yale in the physiological chemistry department by Cowgill and his collaborators in the case of animals deprived of their optimal intake of vitamin B complex by a selected regime. When they were given large amounts of water it was found, contrary to what might be anticipated, that the time required for the appearance of the anorexia characteristic of this dietary essential was markedly shortened. Instead

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**Extract of Rice polishings prepared by Block and Cowgill have been injected subcutaneously and intravenously with success, although injection is painful because of a vasodilator substance; personal communication Dr. Cowgill to Dr. Victor E. Levine, May 28, 1932. The extract is available.

of being protected, the animal was rendered more susceptible to the deficiency of the vitamins. Cowgill points out that this result is not in harmony with the hypothesis that the symptoms of deficiency of Vitamin B complex are essentially those of toxemia. The urge to eat was restored by undifferentiated vitamin B complex. * * * * * His explanation of the results of the forced fluids is a temporary relief of the anorexia and anhydremia, but the removal of the vitamins by the diuresis may actually be detrimental in that it washes the vitamin B complex from an already partially depleted body. Certainly sufficient evidence is at hand, he concludes, that trials of the administration of some potent source of vitamin B complex are warranted. In any event the vague assumption of an existing toxemia may no longer be entirely sufficient to the clinician.

Cowgill(8)(9) also points out the well known fact that the capacity for storage of vitamin B complex in the body is rather limited. Increased exercise definitely decreased the period required for the development of anorexia characteristic of lack of the vitamin B complex. These observations are considered to be supported by the fact that vigorous exercise increases voluntary food intake. Furthermore, the vitamin B complex intake requirement of an animal is significantly increased when the metabolic rate is increased by thyroid administration.

There is a normal increase of 20% or more of the metabolic rate during pregnancy(10)(11). This fact, in view of Cowgill's observations, would make logical the assumption that the vitamin B complex is endangered even during normal pregnancy.

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ADOLESCENTS NEED PARENTS' GUIDANCE

Don't ignore your adolescent children or try to control them. Your task as parents is to guide them, Dr. Frank Howard Richardson implores in his article "Guiding the Adolescent" which appears in the April issue of *Hygeia*.

Wise parents will not attempt to control their children during these difficult years, except when control is unavoidable and in the interests of the children themselves. Here parents should take issue and stand absolutely unswerving.

On all lesser matters, wisdom will allow just as much leeway and self determination as is humanly possible, remembering that things that seem enormously important today frequently dwindle almost out of sight when a week or a month has passed.

Bestow approval wherever possible, as it means so much to your children. Where approval is impossible, be sure of the necessity of disapproval —and then show it without apology. This is excellent leverage for adolescent handling.

Remember that there is a good bit of the bully in the teen-age boy or girl, that bravado frequently covers up a deep timidity. So don't be impressed by the adolescent's bark, for it's usually much worse than his bite.

The average adolescent craves guidance. He has left behind him the days of childhood when unthinking obedience could be exacted from him; and he has not yet attained to manhood's estate, when he must become entirely self determining if he is to be emotionally normal and mature.

One of the commonest mistakes of parents is to believe that they are entitled to absolute obedience to their every whim. Most parents start out with this firmly established conviction, and it tinges their every contact with their children. The adolescent, striving to protect his budding sense of self esteem, fights against this constant show of authority, and endless friction results.

***Quotation from Current Comments, A. M. J., 98, No. 9, p. 741. (February 27, 1932).

PHARMACOLOGIC SHOCK TREATMENT OF MENTAL DISORDERS WITH PENTAMETHYLENTETRAZOL—METRAZOL

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and LOUIS R. NASH, M. D.,
Ingleside.

INTRODUCTION

Who the first astute observer was or when the first observation was made that there is an antagonism existing between the convulsive state and the schizophrenic process is of course unknown, but certainly it has long been recognized that improvement, albeit a transitory one, does follow at times the occurrence of a "shock mechanism" in certain mental disorders. In 1929 Nyiro and Joblonsky observed remissions in schizophrenics following attacks of epilepsy. In 1930 Muller in Switzerland reported two cases of Catatonic Schizophrenia recovering after epileptiform attacks. At about this time a psychiatrist of Budapest, Hungary, L. Von Meduna, working on the assumption that a certain biological antagonism must exist between the convulsive state and the schizophrenic process, began quietly doing animal experimentation with camphor in sufficient dosage to produce convulsions to determine the damage to the blood vessels of the central nervous system. He then started treating cases of schizophrenia by the administration of convulsive drugs. At first he used camphor in oil to bring about the convulsive state, but later turned to Pentamethylentetrazol (Metrazol) a proprietary, cardiac and respiratory stimulant when given in minute doses, because he found that large doses of camphor were necessary and because of its unreliability as a convulsant drug.

The announcements at this time of the favorable results obtained by treating Dementia Praecox or Schizophrenia with insulin (Hypoglycemic Shock) was given such wide publicity that Meduna's preliminary reports of another equally efficacious method of treating mental disorders was allowed to remain in the comparative obscurity of the foreign medical press. In 1934, after treating over one hundred cases of schizophrenia, Meduna reported over 50% remissions in cases treated. Since this per cent far surpassed that ever reported for spontaneous remissions, convulsive therapy of mental disorders began receiving intense investigation and as a result Meduna's findings found immediate corroboration from many clinics. We began the use of Metrazol in the treatment of mental disorders here at the Hastings State Hospital October 26, 1937.

MATERIAL

Since then we have administered Metrazol to thirty cases. Twenty-four of these cases have been completed and six are at the present under convulsive therapy. The twenty-four completed cases consisted of twenty-one Dementia Praecos or Schizophrenics, two Involutional Melancholia, and one Manic-Depressive Psychosis, depressed phase. Since all clinics reporting on this type of shock therapy had clearly shown that the response to Metrazol stands in inverse ratio to the duration of mental illness—the shorter the duration the more certain the success of the treatment—we have been particularly careful in determining as nearly as possible the exact time when psychotic manifestation began. This resulted in our dividing our series of cases into the following grouping:

Group I: Duration of illness up to One Year—2 cases.

Group II: Duration of illness up to Three Years—7 cases.

Group III: Duration of illness up to Five Years—8 cases.

Group IV: Duration of illness up to Ten Years—7 cases.

This gave an average duration of slightly over four and a half years for the entire series. Also in our group there were 17 males represented and 7 males.

TECHNIC

Each patient is given a complete physical and thorough neurological examination associated with the following detailed laboratory studies:

Complete Blood Count.
Urinalysis.
Sedimentation Rate Determination.
Blood Sugar.
Blood Urea.
Non-protein nitrogen determinations.
Six foot chest plate. The slightest evidence of the presence of any febrile condition, pulmonary disease, neurological pathology, cardio-vascular disorders, and in the female menstruation, contraindicates the use of Metrazol.

Then all sedation is discontinued. On the day of treatment the patient is put in bed and on an empty stomach patient receives intravenous injection of Metrazol. The initial dose is 0.5 gm. of Metrazol powder in solution, that is 5 cc. of a 10% solution, and this is increased 0.1 of a gm. up to the convulsant dose. The rapidity of injection is important and the entire amount of solution should be injected as rapidly as possible, preferably at the rate of not exceeding one second per cc. Our treatment days are Mondays, Wednesdays and Saturdays, and if the patient does not have a grand mal seizure with the first injection, fifteen to thirty minutes are allowed to elapse and then another injection with the dose increased 0.1 gm. is administered. The tongue is protected by means of well-padded gags. After the treatment, patient is allowed to rest in bed as long as he desires. No particular attention is paid to the patient's diet during treatment and other than close observation of the patient's physical state during the period of treatment, no special routine is instituted for patients under convulsive therapy. We also feel that during the dazed or confused period which usually follows immediately the return to consciousness, that any psychic probing into the psychotic process of the patient is harmful. However, we do find that after three or four or more convulsions when the patient shows evidence of emerging from the darkened world of fantasy he has inhabited for months or years, he should be given a guiding hand over problems of returning reality, rather than to be rapidly evicted by convulsive therapy into an unfamiliar world of reality which he has already found distasteful and then ignored, and that he is intensely grateful and will gladly accept whatever psychotherapeutic measures that may be offered him.

OBSERVATIONS

Following the intravenous administration of Metrazol, the reaction sets in almost immediately. Usually there is first a premonitory cough occurring within the first five seconds, next there occurs a marked pallor of the face associated at times with a fleeting expression of fear, and then between fifteen and thirty seconds following administration of the drug an epileptic-like seizure comes on. Usually the convulsion is a typical epileptic-like tonic-clonic seizure lasting from thirty to fifty seconds, although we have had on two occasions convulsions lasting over seventy seconds. Following the convulsion the patient may or may not have a short period of coma. In any case, rest in bed for a short time after the convulsion is advisable. Mental improvement may occur after two or three seizures or may be delayed until fifteen or twenty convulsions have been produced. If, however, no improvement is seen after twenty seizures, treatment is discontinued.

RESULTS

In tabulating our results we determined the degree of remission of each case in the following manner: (1) Complete Remission. (2) Marked Improvement with patient able to make a satisfactory home adjustment. (3) Partial remission—improvement, but patient still in need of further hospitalization. (4) No Improvement. The four criteria for complete remission are as follows: (a) Complete disappearance of psychotic symptoms. (b) Restoration of adequate emotional response. (c) Some insight into the past illness, and (d) Full capacity for return to former work. If any of the preceding requirements were lacking, the patient was not considered in complete remission, but this did not preclude the actuality or possibility of the patient making a satisfactory social adjustment.

Our average remission rate of the twenty-four treated cases regardless of the degree and duration is 41.66%. The two cases of Involutional Melancholia and the one case of Manic-Depressive Psychosis show marked improvement in all three cases. In evaluating our results according to the degree of remission obtained we find the following:

1. Complete Remission—None.

2. Marked Improvement with patient able to make satisfactory home adjustment—4 cases or 16%.

3. Partial Remission, improvement, but patient still in need of further hospitalization—6 cases or 25%.

4. No Improvement—14 cases or 58%.

Our average remission rate when analyzed according to the duration of the illness is as follows: Under one year, 100%; One to three years, 57%; Three to five years, 25%; and five to ten years, 28%.

In conclusion let us state that Metrazol is of a very definite value in the treatment of patients with mental disorders, most particularly when the duration is not more than one year, and that if it does not invoke complete remission in chronic cases, it does produce amelioration in sufficient cases to be worthwhile. It is of relative safe and simple technique, except where contraindicated, its only inconvenience is seen in the increased resistance to its application on the part of the patients, due probably to the bizarre subjective sensations aroused. We have had no complications or fatalities in over 450 induced grand mal convulsions.

REPORT OF A CASE OF BRUCELLA ABORTUS INFECTION TREATED WITH SULFANILAMIDE

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Since reports have appeared in the literature concerning the results of sulfanilamide treatment in acute infections, many have questioned whether the drug will prove successful in chronic infections. When the course of the disease has been long and the foci have become widely disseminated, still more doubt has been expressed. The contention is that the organism is protected from the effects of the drug and continues to grow, thereby elaborating local and general symptoms.

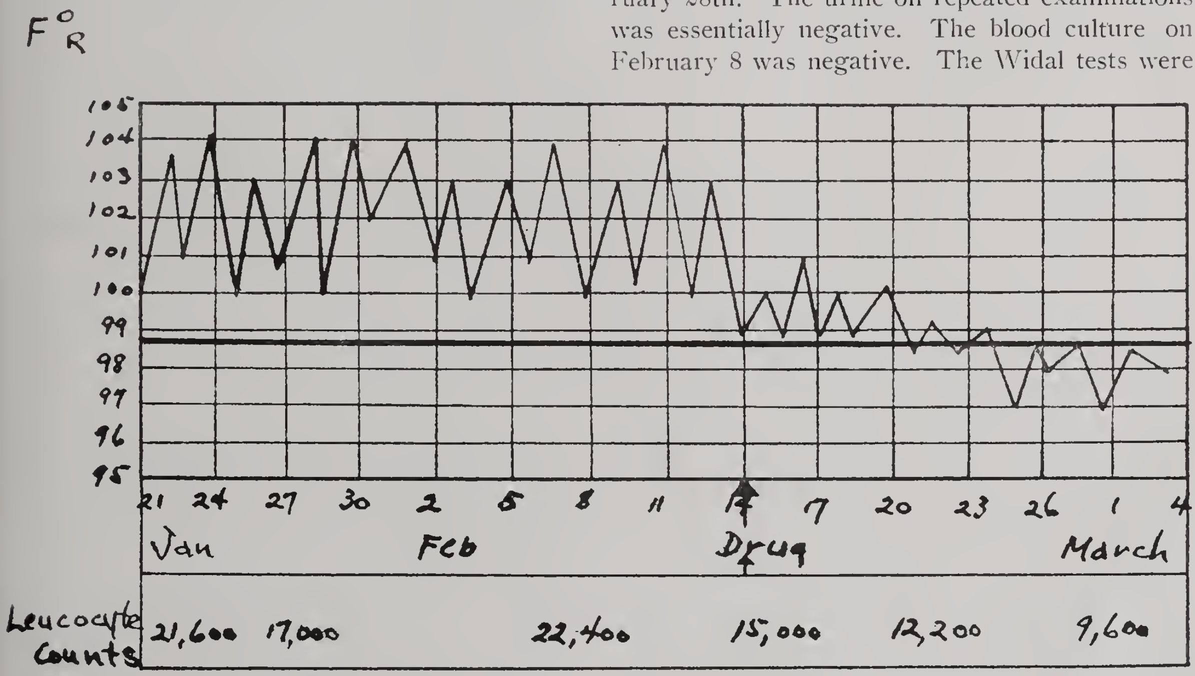
Bethoux, Gourdon, and Rochedix(1) have described the apparently successful treatment of a patient suffering from undulant fever. In their report, however, they admit that the patient's temperature had fallen to normal before the treatment was begun. Berger and Schnetz(2), in April, 1937, reported a clinical history of a patient in whom the Brucella abortus infection did not respond satisfactorily to neoarsphenamine. The neoarsphenamine was discontinued and the patient was given prontosil (sulfanilamide), with a favorable response. In February, 1938, Francis(3) reported two cases of undulant fever in which success was claimed for treatment with sulfanilamide. He also conducted experiments which "appear to show that Brucella abortus is considerably more susceptible to the action of sulfanilamide in vitro than is Strept. pyogenes under the same conditions." Other reports(4)(5)(6)(7)(8) have appeared chiefly on the continent.

H. G., aged 25, a laborer in a nearby community, was first seen by a doctor January 14, 1938. He complained of pain in the upper left quadrant of the abdomen and back. These symptoms had persisted for five days. He had been working and apparently well until January 13, 1938, when he was awakened from his sleep by a cramp in the abdomen above the umbilicus. Next morning the pain had localized in the lower right quadrant. He felt feverish but did not vomit, although he was nauseated. The pain persisted during the day, and in the evening a doctor was called. A fever of 102° F. and an elevation of leucocytes above the normal count were reported. He was taken to a local hospital for observation. Acute appendicitis was suspected, but operation was deferred. On the following morning, the pain in the right lower quadrant of the abdomen had disappeared. There was no rigidity nor local tenderness in this area. In spite of persistent elevation of temperature and white blood count he was dismissed to his home because of the absence of pain. On the following day, after his return home, he complained of severe headache and pain in his upper left abdomen and back. The same night he had a chill, followed by profuse perspiration. These symptoms continued for the next four days, when he entered the University Hospital. His chief complaints at this time were the discomfort incident to the continuous fever and pain in the left side of the abdomen and back.

Aside from the present complaint, he had enjoyed excellent health since childhood, except for an attack of gonorrhoeal urethritis in the summer of 1937, for which he had received treatment and been discharged cured two months before the onset of the present illness. There was nothing significant in his family history. There had been no known exposures to tuberculosis. The water supply for the road building gang of which he was a member was obtained from various farms along the route of the project. The milk used had not been pasteurized; there had been cases of abortion among the cattle on several farms in the vicinity. Some of these were contributors to the milk supply of this patient; and some of it had come from farms where cases of abortion among the cattle had been reported.

The patient was well built. His face appeared to be slightly flushed. The essential abnormal findings were a temperature of 101° F. by rectum and tenderness over the left flank. Deep percussion over the left kidney elicited pain. The pulse was 104, the respirations 34. There were a few pink macular eruptions on the abdomen and chest; and three pustular lesions on the dorsum of the left hand, regarded as furuncles. The prostate was slightly tender, but not enlarged. Nothing could be expressed from the gland for examination. Blood examination: Hemoglobin (Sahli) 86; erythrocytes 4,670,000 per cubic millimeter; polymorphonuclear neutophyles 75%: (polys 18% young forms): lymphocytes 20%: monocytes 5%. The urine was clear and amber colored. The reaction was acid. The specific gravity was 1.020 with no sugar, a slight trace of albumin, no acetone nor di-acetic acid. Microscopic examination: Erythrocytes, none; leucocytes 10-50 per high power field in a centrifugalized specimen. There were no casts. The Kline test and the Kahn test of the blood were negative. The complement fixation test for gonorrhoea was negative. The patient was isolated and given special nursing care.

During the next three weeks, his condition remained about the same. His fever continued with variations from a morning temperature of 101 to 104 in the evening. In the meantime, he had been given forced fluids, a liquid diet, and acetyl salicylic acid for the control of his headache. He was sponged for temperatures over 102½° F. Enemata were given for the control of his bowels. No other medication was ordered because of the possibility of masking symptoms or signs which might be helpful in making a diagnosis. Also, this course was pursued because he did not appear to be very ill. He had a fair appetite and slept well. His only discomfort was the presence of some mild pain in the left upper abdomen and a slight occasional headache when the fever was at the highest mark of the day.



An x-ray examination of the chest January 28, 1938, showed the pulmonic fields and pleural sacs to be clear. The cardiac and mediastinal shadows were not remarkable. This examination was made to exclude the possibility of central lung infection. A flat x-ray plate of the abdomen at this time showed no enlargement of the spleen or liver. Because of continued pain in the left flank, an excretory urogram with diodrast, 20 cc., was made and showed nothing abnormal. An x-ray examination of the colon proved normal.

At this time the blood culture was negative. The stool examination was negative for typhoid by culture. No ovae, cysts, or parasites were found. The Widal tests for typhosus and Para A and Para B were likewise negative. Agglutination for tularemia was likewise negative. On January 26, 1938, agglutination for undulant fever was positive in 1/100 dilution; doubtful in 1/200 dilution.

During this period, blood counts had been made almost daily. The significant findings included an elevation of leucocytes. The counts ranged from 26,000 cells per cubic millimeter on January 29; 24,000 on February 8; 15,000 on February 15; 12,200 on February 25, and to 9,600 on February 28th. The urine on repeated examinations was essentially negative. The blood culture on February 8 was negative. The Widal tests were likewise negative. The sedimentation study on February 19 showed 6 millimeters settling in 5 minutes, 12 millimeters settling in 8 minutes, 18 millimeters settling in 12 minutes and 24 millimeters settling in 16 minutes. On February 8, an agglutination test for undulant fever was made and showed positive in a 1/100 dilution. An intradermal test, using the antigen, was made. The result was described as being positive, 2 plus; with a control patient in the ward described as negative.

On February 14, Prontylin (1.3 gms.) was given 4 times orally for two days. Prontosil (10 cc.) was injected intramuscularly for two successive days. At this time the fever was and had continued to be elevated above normal since admission to the hospital. On February 16 an agglutination test for undulant fever showed positive in the following dilutions: 1/25, 1/50, 1/100, 1/250; doubtful 1/500. The temperature on February 16 was 99.

See chart for fever curve during the course of treatment in the University Hospitals.

There was no reaction following the administration of the drug. The temperature dropped to normal in a most dramatic manner and remained so.

The dose of Prontosil was reduced after two days to 5 cc. intramuscularly and to 1.2 gms. of Prontylin three times daily. These were given for the next four days. The drug was then discontinued. There was no return of fever. The patient felt well and began to gain weight, having lost 18 pounds during his stay in the hospital. A prostatic smear was taken and reported as negative. The complement fixation test for gonorrhea was made and reported as negative. He was discharged March 3, 1938, apparently well.

This patient presented a type of general and rather chronic infection. The administration of prontylin, followed by a dramatic recovery, is emphasized.

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PROSTATIC OBSTRUCTION IN GENERAL PRACTICE*

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It is surprising in this age of supposed enlightenment how often one hears a patient make the statement that his doctor has advised him to delay any surgical attention to his prostatic difficulty as long as possible, so that in spite of present medical and surgical progress, many elderly men suffering from prostatic obstruction are apparently not receiving satisfactory relief of their difficulty. As urologists, we are certain that the great majority can be happily treated, and yet many of the laity and too many of the physicians who contact them as their family medical advisors are not at all convinced of the desirability of surgical attention. There are many reasons for this doubting attitude, some of them having to do perhaps with medical economics, but I suspect the chief reason is that too many of the patients who submit to some sort of surgical treatment do not get the happy result they are promised. If prostatic surgery, as practised here and there by all surgeons, gave the patient fairly uniform relief, we would not have radio quacks say that fifty per cent of our patients die and that the remainder wish they were dead. In brief, I am saying that we collectively are not doing our work as well as it can be done. If we had the majority of our prostatic patients well satisfied after operation, there would be no remarks by prospective patients that several of their neighbors have had operations and are none too well, or from a doctor, that most of the patients operated upon in his community have not had satisfactory results.

There must be a principal reason why surgery is not being as well received by patient and doctor as it should be. We can not assume that all prostatic surgery will be done by experts, nor that all general surgeons who will continue for various reasons to do prostatic surgery will be able to become experts in all the various fields in which they operate. We can hope however that a few fundamental facts can be laid before these men with sufficient emphasis to enable them to apply their therapeutic measures more effectively. Incidentally those who leave the actual surgery to others may change their attitude and hence their policy of advising their patients.

Needless to say proper therapy rests on the premise of previous accurate diagnosis. Certainly one must not conclude that every elderly man who walks in with a urinary complaint is suffering from prostatic obstruction. A considerable number of men are being educated by radio eloquence to the fact that they should expect prostatic trouble. The natural result of this advertising is that many who have time and money begin to feel that they do have some such difficulty, and if they have sufficient money, the radio doctor will certainly cure them unless they do have actual prostatic obstruction, in which case you or

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*Read before the Omaha Midwest Clinical Society, Oct., 1937.

I will see them later when the money may be no longer in the picture. It is a fact that occasional patients present themselves complaining of functional disturbances incident to the decline of physical fitness generally and of sexual ability in particular. These can be readily recognized and symptomatically treated without surgery. These are the cases that require sympathetic advice and often some office treatment to keep them out of the hands of charlatans until a proper sense of proportion can be restored.

Those with actual obstruction should be studied carefully with such differential possibilities in mind as stricture, calculus, bladder tumor, diverticulum, carcinoma of prostate, and cord bladder. However brief our consideration of the diagnostic side of the problem, we can not pass on without mentioning the fact that while rectal examination may give valuable evidence of benign enlargement, of malignant change, or of sphincter relaxation, it can not give any information regarding the condition of the prostatic enlargement within the bladder where it may occur without any palpable evidence per rectum. Hence negative findings really make cystoscopy doubly necessary before a final opinion may be expressed. A man presenting symptoms of obstruction such as hesitancy, frequency, and nocturia of troublesome degree is entitled to a careful examination from every standpint. I do not believe in submitting every man to prostatic resection as a sort of prophylactic measure simply because he has perhaps a little hesitancy and can be sold on the idea that he needs surgery to prevent future trouble, but I do urge that men having actual difficulty be given the advantage of modern care before chronic urinary obstruction has resulted in irreparable damage to every tissue in the body. Even though such neglected cases, coming as emergencies, do survive surgery, their damaged old bodies may never recuperate to the point where there is any satisfaction in living. Moreover, several years dragged away in urinary discomfort before relief is advised through surgery are so many fleeting years wasted when they might have been enjoyed. How often satisfied patients say "I should have done this sooner."

MANAGEMENT

Given a patient in whom troublesome prostatic obstruction really exists the problem of therapy is next to be solved. What you will do will depend on the actual condition of the patient as regards degree of urinary retention, pain, bleeding, kidney damage, and general strength. The treatment for relief of pain and retention will be obvious and dictated by necessity. If the general condition is very poor, it should be apparent to even the most occasional observer that preliminary bladder drainage must be instituted to allow a reserve to be rebuilt in the kidneys as excretory organs and to permit restoration in some degree of the normal psysiology all of which has been upset seriously by the retention of nitrogenous waste. But there will be other patients whose general health seems to have suffered very little as a result of their urinary retention. These are more deceiving and many a surgeon has operated upon them with secret regret because without previous proper preparation their damaged kidneys and hearts could not withstand the added load which followed surgery. How much preparation to give can be decided in a manner by such data as reports on blood nitrogen, quantity of residual urine, amount of infection in urine, but there can be no fixed set of rules that will operate as a substitute for experience in these matters.

If you have correctly settled the question of whether the patient is ready for operation, the next step is the decision as to type of operation and its actual performance. Not so long ago heated controversy was common as to the relative merit of suprapubic and perineal prostatectomy. The question was never settled beyond the point where a few admitted that the skill and training of the given operator might determine which operation was better for him to employ. The question was really superceded by a more modern one, namely whether to advise prostatectomy or transurethral prostatic resection. This too might be sensibly settled by allowing that each operator would be more successful if he chose the operation which he was properly trained to do. Such a simple and quiet solution leaves no place for the glowing reports of various operators extolling the merits of one or the other procedure as the method of greatest choice for relief of all prostatic obstructions. A thoughtful consideration of the great variations in the gross pathology of obstructions requiring removal should lead one to the conclusion that no one operation can be applied equally well to all patients regardless of the height of specialization in one operation to which the given operator has attained.

The accompanying illustrations (Plates 1 to 6) taken from actual tissue photographs will show the wide differences in size and shape of prostatic overgrowth. If we take three types of accepted surgical operations, supra-pubic prostatectomy, perineal prostatectomy, and transurethral prostatic resection, and grant that certain men are expert in the performance of each, we may still find among these illustrations of pathology the reason why one of these three operations would be superior to either of the other two in a given case. For example, the most skillful suprapubic operator has encountered small fibrous obstructions which taxed his resources to the utmost before he was able to remove exactly the right amount of tissue to give relief of obstruction and have a properly healed suprapubic wound. If he has not encountered such cases, he has not operated many and so can not qualify as very highly experienced.

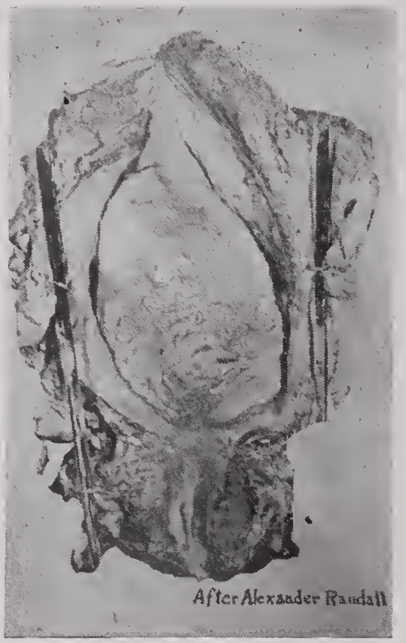

PLATE 1: The normal adult prostate and bladder. The accompanying illustrations are copies of actual photographs of fresh post mortem material. Variations in size, shape, and relationships can therefore be appreciated by comparing the other plates with the above normal.

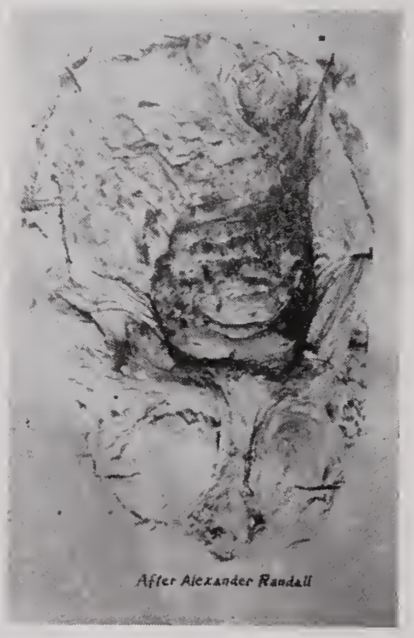

PLATE 2: Hypertrophy limited to the lateral prostatic lobes. Palpable evidence marked per rectum. Little except trabeculation seen at cystoscopy. A type more difficult to properly resect and better suited for prostatectomy.

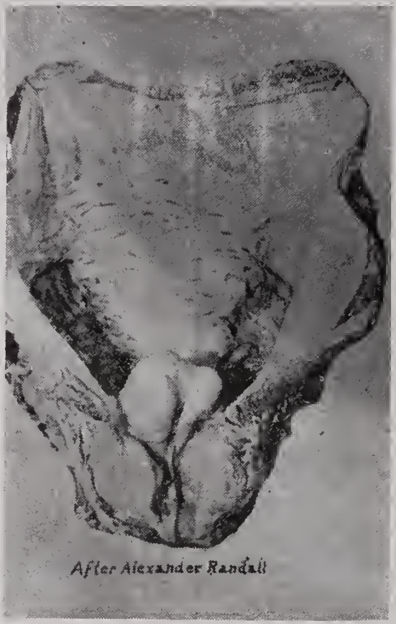

PLATE 3: Solitary Subcervical Lobe. So-called "Median Lobe" arising from glandular tissue found in the floor of the prostatic urethra. Obstructive influence marked. Rectal findings normal. Facts discovered only by cystoscopy. Ideal for resection. Contrast with Plate 4 as distinguishing the two types of "middle lobe" hypertrophy.

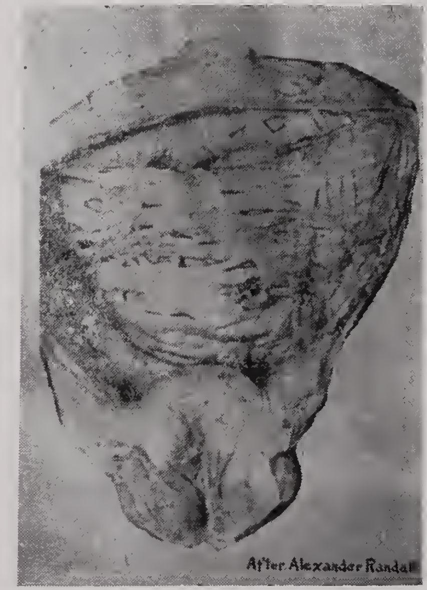

PLATE 4: Posterior commissural type of prostatic hypertrophy. Obstruction influence manifest by marked bladder trabeculation. Little evidence of prostatic enlargement per rectum. Facts discoverable by cystoscopy only. A type generally suitable for resection.

The skillful perineal operator has the advantage in these cases of small fibrous obstructions in which enucleation by the process of "shelling out" is actually impossible, but the technique of perineal prostatectomy is not easily acquired to the point where other difficulties such as incontinence or rectal injuries cease to be a hazard. Given sufficient skill on the part of the operator perineal prostatectomy is probably the most universally applicable of all the procedures of choice; but with an equal degree of skill, a transurethral operator can accomplish equally gratifying results in most cases with a much shorter period of hospitalization, with an equal degree of safety to the patient, and with the added advantage that he has an operation which the patient is more liable to accept before much extensive general damage has occurred. The transurethral operator has his handicap in that group of very large adenomatous hypertrophies where two or even three sittings may be necessary before sufficient tissue can be removed to affect a real cure. He has another handicap in that his patients are generally dismissed from the hospital at a time when convalescence is far from completed; and in more instances than he may ever know some of these patients have persisting difficulty which finally leads them to another operator who resorts to prostatectomy. Some independent souls just don't come back to complain. They go elsewhere. It seems to be a not too weli recognized fact that each operation may have its disadvantages arising either from the inexperience of the operator of the peculiar conditions active in a given case.

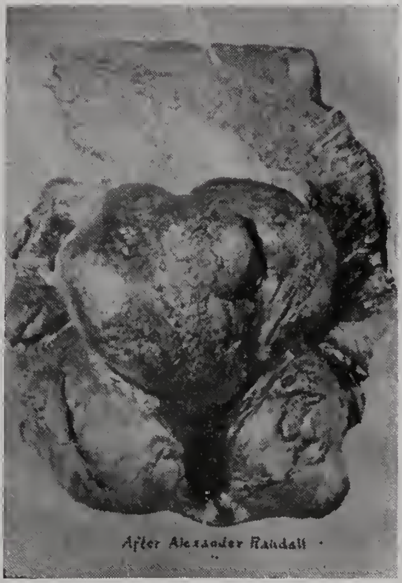

PLATE 5: Two enlarged lateral lobes held apart by a tremendous subcervical lobe. (See Plate 3). Enlargement palpable per rectum but only cystoscopy could reveal the additional "middle lobe." An enormous job for transurethral resection, and it might be found that the instrument could not reach to the upper limits of the "middle lobe."

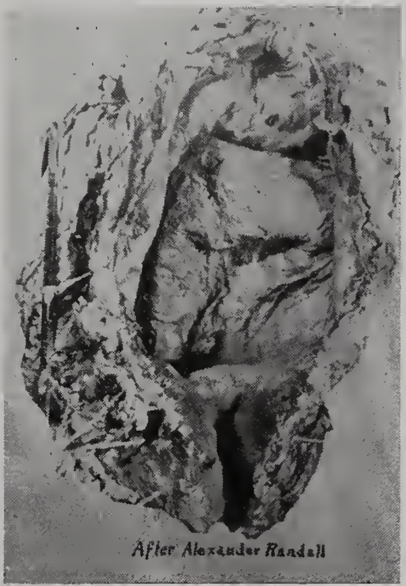

PLATE 6: Fibrous median bar. The obstruction consists of a dam of tissue lying between a deep bas fond and the prostatic urethra. Ideal for resection.

There is no excuse for inexperience, and if the patient or his physician selects an inexperienced man, the poor result, if it occurs, should not be charged against the procedure used. As for the peculiar conditions modifying the given case, why not evaluate their influence on the possible outcome in the light of the operator's experience and let the operator select the operation most suitable for the particular case and its attending conditions. There are two principal objections to doing this but neither should claim any importance. One is the necessity of reserving the decision as to type of operation until the case is thoroughly studied—that is, making no promise to the patient ahead of time that a new and simple operation requiring only a few days hospitalization will cure him. The other is the requirement that the operator perfect himself in technique to the point where he need no longer defend nor attack the virtues of any operation but select the one which offers the greatest benefit from every standpoint for the case under consideration. When this is the attitude of medical men generally, we will have more patients satisfied with their prostatic surgery and more doctors freed of doubt concerning the advisability of such surgery.

The illustrations herewith have been copied from Alexander Randall's "Surgical Pathology of Prostatic Obstructions" and have been used with the permission of Dr. Randall and of the publishers, The Williams and Wilkins Company of Baltimore.

MISUNDERSTOOD

Mr. Brown, the proud father of newly born triplets, rang up the local newspaper to report the glad tidings. The girl at the other end did not quite hear what he said.

"Will you repeat that?" she asked.

"No fear," was the answer, "not if I can help it."

THE BEDSIDE RECOGNITION AND TREATMENT OF CARDIAC IRREGULARITIES*

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Omaha.

While it is acknowledged that electrocardiography is the last court of appeal, and its judgment rarely at fault, it is also true that the clinician, by the use of his special senses and the stethoscope, will rarely need the use of the above instrument of precision for the recognition of the common irregularities of the heart.

It is no longer sufficient for a physician to state that a heart is irregular or slightly irregular. He should be able to state in most cases the type of arrhythmia present, especially as it can be done with little difficulty, and without elaborate and time consuming procedures. It is only rarely that an abnormality of the heart beat will be met which needs the aid of the electrocardiogram. The accurate recognition of the irregularity at the bedside will save the patient expense and will often be of vital importance in treatment, possibly life saving at times.

Disorders of the heart beat consist of disturbances of the normal rhythm itself, ordinarily called sinus arrhythmia; sinus bradycardia; sinus tachycardia; premature beats; paroxysmal tachycardia; auricular flutter; auricular fibrillation; heart block; and pulsus alternans.

SINUS ARRHYTHMIA

Under normal conditions a deep inspiration tends to accelerate the heart rate, a deep expirations to retard. When this condition becomes exaggerated so that ordinary breathing produces a distinct pulse irregularity, it is known as sinus arrhythmia. It is the result of nervous instability in which the balance between the action of the sympathetic and vagus nerves on the pacemaker is an extremely delicate one; the vagus being overactive in this condition.

Sinus arrhythmia is also known as juvenile or respiratory arrhythmia. Sometimes it may appear as if the arrhythmia is not definitely related to respiration, but a simple test of forced respiration will quickly settle the matter. Forced inspiration in such an individual will produce a definite tachycardia, while forced expiration will produce a pronounced bradycardia.

This arrhythmia is of little importance and needs no treatment itself. It is most common in young people and tends to be exaggerated in convalescence from illness, and in nervous or physical fatigue of any type.

SINUS BRADYCARDIA

Sinus bradycardia, or a normally slow heart, is a condition in which the pulse is 50 or under. It results from increased vagus tone and occurs in a small percentage of normal individuals and in clinical states, such as jaundice, inanition, and after fevers. It is not indicative of heart disease, the transmission of the impulse through the heart being normal, but slow and regular. The differential diagnosis of a normal slow heart, from heart block, is discussed under Heart Block.

NORMAL TACHYCARDIA

The normal heart rate ordinarily ranges from 60 to 90, but as the result of fever, emotion, exercise, hyperthyroidism, anemia, shock, hemorrhage, etc., the rate may range as high as 150 per minute or higher. In this condition each beat arises at the normal pacemaker and travels across the heart normally at a rapid, but perfectly regular rate.

Treatment must be directed at the underlying cause. In rates over 150, the abnormal tachycardias have to be differentiated. The differential diagnosis and bedside recognition is discussed under the Tachycardias.

PREMATURE BEATS (EXTRA SYSTOLES)

The commonest and simplest abnormalities of cardiac rhythm are premature beats. They may be defined as an irregularity of the heart beat as the result of contractions which usually arise independently of the pacemaker (sino-auricular node) from an abnormal or ectopic focus in the heart, before the natural impulse is due.

The two main types are auricular extra systoles and ventricular extra systoles. When the premature impulse arises in the auricle, it destroys whatever chemical material had been stored up in the normal pacemaker which was being prepared for the next normal contraction, and so the pacemaker has to start all over generating its impulse. In the meantime, the premature contraction will replace the natural beats of both auricle and ventricle that are nearly due; if the premature impulse arises in the ventricle, the ventricle only will be involved. In either case, the early beat of the ventricle will expel a smaller quantity of blood than usual into the aorta and the corresponding pulse beat will be weak or will fail. When the early beat fails, the pulse intermits. The normal impulse from the auricles, coming down a little later, now finds the ventricles refractory, for they have just contracted and cannot contract again. The result is that there is a long pause after this extra systole until the following auricular impulse comes down to excite the ventricles.

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*Presented before the annual meeting, Nebraska State Medical Association, Omaha, May 11-13, 1937.

Extra systoles can usually be identified with ease on auscultation. The heart is heard beating regularly when, suddenly, a quick beat with a pause occurs. The quick beat is the extra systole. It can be easily overlooked if it is weak. When the ventricles contract prematurely, they have less than their usual force. Extra systoles are weaker and less efficient than normal beats in proportion to their prematurity. If their contraction occurs early in diastole, the ventricles have little opportunity to fill, the pulse is small, and may not reach the wrist. When the extra systole is very premature, the intraventricular pressure developed by the ventricles may be insufficient to open the aortic valves, so that no pulse and no second heart sound occurs. During the long pause following an extra systole, the ventricles receive more than the usual quantity of blood and the contraction which follows is usually powerful.

Extra systoles may be very infrequent, so that it might be difficult for the examining physician to detect their presence, or they may occur every several seconds. Commonly, they occur every second beat and produce a coupled rhythm or bigeminus. The auscultatory findings will be lubb-dupp pause, lubb-dupp short pause, lubb-dupp long pause, lubb-dupp pause.

Extra systoles may occur at any age, but are much more frequent after the age of forty. They are very common both with and without heart disease, and cannot by themselves be considered evidence of cardiac disease. When they are discovered, the heart should be completely and carefully examined and a search should be made of other signs of ill health; but if nothing else can be found, the arrhythmia can be almost wholly disregarded from a prognostic standpoint.

In three respects the premature beat assumes importance. First, people with heart disease show relatively a higher incidence and greater frequency of occurrence of premature beats than do people with normal hearts, even though the absolute incidence of premature beats is greater in people without heart disease. Secondly, the premature beat may be a source of great discomfort or fear, which must in itself be treated, and thirdly, the premature beat is now and then traceable to some toxic substance like digitalis, adrenalin, tobacco or coffee, or to some emotional upset occasioned by certain thoughts, dreams, or other nervous factors.

When we consider that it is probable that few people reach old age without having been subject to extrasystoles on occasions, we can understand that they give rise to no subjective sensations in most people. In those that have sensations, they may be the cause of profound anxiety. Among the common symptoms complained of are palpitation, constriction in the throat, a stopping or turning over of the heart, giddiness, or a vague precordial distress. Some of these complaints are due to the strong contraction that occurs after the compensatory pause which can be seen to beat violently in the carotid arteries, or it may be the result of the auricles contracting while the ventricles are in systole, and thereby blood is regurgitated up the veins of the neck. Extra systoles are especially prone to occur when the individual is resting or in bed, due to a slower heart rate with a longer diastolic pause, giving more opportunity for a beat to rise prematurely. Generally speaking, extra systoles are not present continuously. Changes in posture, deep breathing, holding the breath, or fatigue, often increase their frequency. They tend to disappear temporarily when the heart rate arises, as, for example, following exercise; they are seldom associated with rates above 120.

The ventricular extra systole has a peculiar clicking quality, also careful inspection of the jugular vein will often disclose a sudden large pulse wave. Although both have no clinical significance, they may indicate a preliminary or intermediate stage in the development of disturbances of a higher order in their respective chambers. The patient who has attacks of paroxysmal auricular tachycardia, or flutter, may show auricular extra systoles between attacks. Likewise, cases of paroxysmal ventricular tachycardia or fibrillation may have isolated ventricular extra systoles between attacks.

In differential diagnosis; extra systoles, when very numerous and varying in prematurity, may be difficult to distinguish from auricular fibrillation. The following points may help: (1) Extra systoles are much more likely to be transient than persistent; the reverse is true of auricular fibrillation. (2) Extra systoles are usually abolished or greatly diminished by exertion, by the administration of amyl nitrate or atropine, or by any procedure which increases the heart rate; in auricular fibrillation the arrhythmia tends to become more conspicuous as the heart rate rises. (3) Arrhythmia in the presence of a heart rate above 120 is seldom due to extra systoles. It usually means auricular fibrillation. It is to be remembered, however, that they both may give rise to a distinct pulse deficit.

Except in those rare instances in which the premature beats are neither palpitable or audible, the intermittent pulse of extra systolic arrhythmia may be distinguished from that of partial heart block by listening or feeling for the weak beats of the apex. In heart block there is a complete silence.

As a rule, premature beats in themselves demand no treatment. Complete reassurance should be given the patient, emphasizing the harmlessness of the condition, and that it does not signify a diseased heart. When they persist and are troublesome, medication should be tried. Quinidine sulphate in small doses, three or four grains (3-4), two or more times a day, is advisable. Ammonium Bromide, ten grains in water (10), three or four times a day, or digitalis, grains one and one-half (1½), three times a day for a week. Strychnine and atropine in some cases are of value. Potassium phosphate, fifteen to thirty grains (15-30), three times a day, has been of value. If nervous or toxic factors are present, they should be controlled if possible. The stoppage of tobacco or alcohol, the treatment of fatigue or constipation, may suffice to abolish the premature beats. In many cases no special measures are effective and the premature beats come and go without possibility of their control.

PAROXYSMAL TACHYCARDIA

Paroxysmal tachycardia is a relatively common disorder of cardiac rhythm, closely related to premature contractions and consists in a sudden acceleration of the heart rate lasting seconds, minutes or hours, which ends abruptly and in which the previous cardiac rate is approximately doubled, trebled, or quadrupled.

An irritable or ectopic focus in the auricular or ventricular myocardium becomes the origin of a rapid success of regular impulses which dominate the pace of the heart. Its main characteristics are its sudden onset and offset, its rapid rate, (usually 160 to 180) and its tendency to great regularity.

Clinically, the underlying causes of paroxysmal tachycardia are just the same as for premature beats. It may occur in organic heart disease and is not infrequent in thyroid heart disease, arteriosclerotic heart disease or rheumatic heart disease, but it is much more commonly found in the absence of organic heart disease and in the presence of irritability or irritation of the myocardium. Toxic influences, such as digitalis, tobacco, alcohol, indigestion and fatigue, are not uncommon predisposing factors.

Paroxysmal auricular tachycardia is quite common, usually unimportant, and about seven to eight times as frequent as paroxysmal ventricular tachycardia. It is generally benign and harmless, as a rule lasting but a few minutes. It tends, however, to occur off and on through life at long intervals. If associated with organic heart disease it may produce congestive failure, especially if the rate is extremely rapid and the attack is prolonged.

The diagnosis of paroxysmal auricular tachycardia is generally simple, especially if there is an opportunity of witnessing an attack. The rate will be rapid, perfectly regular and all heart cycles will sound alike. The rate should be counted for a minute and then an attempt made to disturb the rate by having the patient exercise or hold his breath. Then the count is repeated and it should be exactly the same as the former one. In the normal sinus tachycardia, the rate will be somewhat changed, following the above procedure.

The second procedure that often establishes the diagnosis is stimulation of the vagus. Pressure over the carotid sinus or ocular pressure often bring an attack to an end, the rapid rate suddenly falling to normal during such manipulation. If the rapid rate is due to paroxysmal tachycardia, it will be entirely unaffected or it will abruptly fall to normal. If there has been slight temporary slowing during the vagal stimulation, it is very likely a normal tachycardia, for the paroxysmal type will not change at all until the attack ends. In auricular flutter, which may have a high, rapid, regular rate, vagus pressure practically always produces temporary slowing with abrupt changes in the length of the heart cycle, with interruptions of short and long pauses.

Treatment consists of the discovery and omission of the exciting cause which, as in the case of premature contractions, is not infrequently impossible. In the control of the individual attack one or another of the following procedures should be tried. The simplest is to have the patient hold a deep breath as long as he can; it is often effective. Much more effective is pressure over the carotid sinus. At the angle of the jaw, where the common carotid artery divides, pressure over the vessel will send an impulse to the medulla and thence continues down the vagus nerve. In about one-third of cases it will end the attack abruptly. Pressure should be applied for several seconds, first on one side of the neck, then on the other. Occasionally when this is ineffective, direct pressure over the eyeball may be effective. The pressure must be firm and is quite painful, an impulse is sent up the fifth nerve and reflexly down the vagus. It is especially effective in younger people.

Many other procedures which in one way or another produce vagus pressure may end attacks, such as lowering the head, swallowing bits of ice, retching, vomiting, the hypodermic injection of apomorphine, the oral administration of syrup of ipecac, the subcutaneous injection of acetyl-beta-methylcholine in doses 20 mg., large doses of digitalis hypodermically (4 cc.), or quinidine sulphate, five grains (5) intravenously. Quinidine sulphate is a dangerous drug and should seldom be used intravenously.

The preventions of recurrences usually offers a more difficult problem than the immediate treatment of attacks. Infrequent attacks usually require no medication. On the other hand, spells that take place every few days or weeks should have every possible benefit of therapy. The most valuable drug for the purpose is the constant administration of digitalis in full doses. If digitalis fails to prevent attacks, the constant use of quinidine, three to five grains, (3-5) two or three times a day by mouth, should be tried. A regime of this type should be carried out over a long period of time to judge its effectiveness.

Paroxysmal ventricular tachycardia, unlike auricular tachycardia, usually accompanies grave heart disease. It is often clinically distinguishable from paroxysmal tachycardia by the following features. First, in most cases the rhythm of the heart will only apparently be regular; on careful auscultation a slight irregularity for several beats will be heard now and then; second, the quality of intensity of the first heart sound will often vary in different cycles, due to the changing time relationship between the auricular and ventricular contractions; third, the mechanism will be entirely uninfluenced by the various methods of stimulating the vagus.

The only effective treatment of ventricular tachycardia is quinidine. In most cases quinidine sulphate in doses of five to fifteen grains, (5-15), three to four times a day, will be sufficient to slow the ventricular rate or restore it to normal. If the rate is only slowed, atropine sulphate, grain 1/30 to 1/50 hypodermically, an hour or so after a large dose of quinidine, may restore the heart to normal rhythm. Quinidine sulphate in doses three to five grains, (3-5), several times daily, should be used as a preventive measure if the attacks are recurrent. This is one condition in which digitalis should not be employed. Theoretically, it may precipitate ventricular fibrillation and instant death.

AURICULAR FIBRILLATION

Auricular fibrillation is the most important disturbance of the heart rhythm that is met with in general practise. It is the most common arrhythmia of serious import. When not properly treated it gives rise to marked disability. Once established, it is usually permanent, but may be paroxysmal in character. It occurs with a variety of clinical conditions, but most commonly with mitral stenosis, hyperthyroidism, and degenerative heart disease. In a goodly percentage of cases, there is no apparent cause, the individual seeming perfectly healthy without heart disease or toxic processes in the body.

The physiological mechanism involved is a circus movement in which the so-called "Mother Wave" travels around the auricle in an irregular sinus fashion, repeating over and over the same course. This wave appears to stagger along its course, arriving irregularly and inaccurately at its original starting point. This is due to the impulse traveling so rapidly that bits of tissue here and there are still refractory when it completes the circuit and so it constantly dodges from one side to another, seeking muscular bundles that are ready to contract. Such irregularity and rapidity naturally lead to irregular ventricular responses. The auricles do not actually contract, but remain distended in diastole, fibrillating at a rate of 400 to 800 per minute. The irregularity of the ventricles follows no definite pattern, short and longer pauses coming in no predicable manner. The peripheral pulse is absolutely irregular, both in time and force. If the heart rate is rapid, many of the weaker contractions fail to reach the radial pulse, producing a pulsus dificit, (radial count less than the apex count).

The bedside diagnosis is not difficult. (1) The heart rate will be rapid and grossly irregular and there will be a pulsus deficit. The arrhythmia of auricular fibrillation is the only type of irregularity commonly associated with tachycardia. When the ventricular rate is 120 per minute or more, auricular fibrillation is probably present. With a ventricular rate of 140 or more, this probability approaches certainty. In an obvious cardiac, with a heart rate over 100, and a pulse deficit of more than 10, if the rhythm seems to be totally irregular, it is due to auricular fibrillation, nine times out of ten. The exceptional cases are rare instances of auricular flutter, with varying block, or the presence of frequent multiple extra systoles. Increasing the heart rate will usually settle the diagnosis. In extra systoles, the pauses that are heard occur after a quick or short beat and are always completely or partially compensatory. In auricular fibrillation, listening carefully, will show at times a pause not preceded by a quick beat. (2) When the ventricular rate is below 120 per minute, it may be raised above this level, the patient's condition permitting, by exertion or by the administration of amyl nitrate or atropine. Extrasystoles, partial heart block, and sinus arrhythmia are very often abolished; the arrhythmia of auricular fibrillation persists and often becomes more conspicuous. (3) Although auricular fibrillation is not infrequently transient, it is much more likely to persist from day to day and from week to week than any of the disorders of the heart beat with which it may be confused. (4) Auricular fibrillation and extrasystoles are the only causes of arrhythmia that give rise to a pulse deficit. The absence of a pulse deficit, however, does not exclude either. (5) Auricular fibrillation is the most frequent cause of arrhythmia in patients with cardiac failure. (6) The effect of digitalis upon the ventricular rate may help to distinguish auricular fibrillation from extra systolic arrhythmia.

The most effective treatment of auricular fibrillation is usually digitalis in adequate doses; a definite slowing of the heart is to be expected. In a case not having previously received digitalis, a very convenient method is to give five, one and one-half grain tablets (5-1½) the first day, and a similar dose the second day, to be followed with three doses a day for a few days, until the rate is slowed to about seventy or toxic manifestations develop. The maintenance dose is about one and one-half grains daily. The main purpose of digitalis is always to slow the ventricular rate and not to alter the underlying irregularity in the auricles.

Quinidine sulphate is the drug of choice if it is desired to stop the fibrillation of the auricles. The decision as to its use in the presence of auricular fibrillation associated with organic heart disease, should only be made after careful deliberation; for quinidine can produce embolism and instant death. Quinidine is dangerous. Digitalis is not. In the fibrillating heart not associated with organic heart disease, quinidine is not dangerous and is very effective. The dose will vary from three to fifteen grains or more (15-20), three times a day.

AURICULAR FLUTTER

Auricular flutter is a rather uncommon form of arrhythmia which occurs chiefly in elderly subjects. It is characterized by an extremely rapid auricular action, the rate being from 200 to 400 per minute, usually above 300. When established, it usually lasts for months or years, but may occur in paroxysms. It is due to a mechanism similar to that which produces auricular fibrillation; the difference being that the circus movement is less rapid and more regular. The ventricular rate is generally one-half the auricular rate, but any degree of block may be present. The ventricles may beat regularly if the degree of partial block is constant, or irregularly if the degree of block varies (e.g.; 3 to 2, 2 to 1, etc.). It is much influenced by digitalis and vagal compression. Digitalis may change auricular flutter to fibrillation and the latter to a normal rhythm, or it may have no demonstrable effect.

In a case which has not been given digitalis, the block is generally 2 to 1. The auricular rate, therefore, may be 300 and the ventricular rate 150. It should be kept constantly in mind that it is the ventricular rate one hears on auscultation and not the auricular. The latter may only be judged from the former. Given a regular rapid heart with, for example, a rate of 150, there are three diagnostic possibilities; normal tachycardia, paroxysmal tachycardia, or auricular flutter. In auricular flutter the ventricular rate almost always can be temporarily slowed by carotid sinus pressure. Stimulation of the vagus prevents some beats from reaching the ventricles by its inhibiting effect upon the conduction tissue. As the stimulation is released, the rate returns to its original rapid level. In paroxysmal tachycardia, the attack will either cease entirely or have absolutely no effect. In simple tachycardia, carotid pressure produces temporary slowing which comes on and recedes gradually. In auricular flutter the temporary slowing is associated with abrupt changes in the length of the heart cycle, with interruptions of short and long pauses.

The actual rate of the rapid regular heart will at times be sufficient to establish a correct diagnosis. In auricular flutter the ventricular rate is seldom above 170 per minute and is usually between 110 and 160. In paroxysmal auricular tachycardia the rates are usually between 180 and 240. In simple tachycardia, deep breathing may produce a slight respiratory arrhythmia. It does not do so in flutter or paroxysmal tachycardia. The rate in flutter is usually constant from hour to hour, while in simple tachycardia, fluctuations in rate are the rule. In simple tachycardia, change of posture, exertion, the administration of amyl nitrate and other measures which alter vagal tone usually produce a conspicuous change in heart rate but do not give rise to pronounced ventricular arrhythmia. In auricular flutter similar measures either fail to produce an effect, produce transient ventricular arrhythmia, or cause a profound and sudden change in heart rate in which a simple ratio exists between the new and the old rate. A persistent regular rate above 135 per minute in chronic heart failure uncomplicated by infection or hyperthyroidism is usually due to auricular flutter.

When the ventricles are responding irregularly, the arrhythmia must be distinguished from the arrhythmia of auricular fibrillation. In many instances exertion or the administration of amyl nitrate, by decreasing the grade of black, permits two to one response, and the ventricular rhythm becomes regular.

Auricular flutter once established may persist for years. It is most frequently a complication of rheumatic valvular disease, myocardial, or thyroid heart disease, although it may be found in otherwise healthy individuals as a purely functional arrhythmia. It is undesirable to permit flutter to persist because it is difficult to keep the ventricular rate slow and there is always the remote danger that the accompanying heart block will disappear entirely with a resulting one to one mechanism. The ventricular rate can then reach a level of 300 or more with collapse of the circulation.

The treatment of auricular flutter consists of first administering digitalis. When an appropriate amount of digitalis has been given the rhythm may become grossly irregular with the onset of auricular fibrillation. If digitalis is now omitted a normal rhythm is often established in the next twenty-four to forty-eight hours. About one-third to one-half the cases of flutter respond to digitalis therapy in this fashion, in other cases the fibrillation that develops persists.

Quinidine sulphate in doses of five to fifteen grains or more (5-15), three times a day, should be tried if digitalis therapy succeeds only in slowing the ventricles, but allows the flutter of the auricles to continue. Digitalis should always have been used previous to the trying of quinidine sulphate. In most cases following this procedure a normal rhythm will be established. Constant administration of digitalis or quinidine, or both, in small dosage may be necessary following the restoration of the flutter mechanism to normal if the flutter tends to recur or congestive heart failure has been present.

HEART BLOCK

Heart block is a local defect in the transmission of impulses which interferes with the spread of the impulse in such a way that various portions of the heart muscle no longer contract in their natural sequence. Heart block may be one of three types, sino-auricular, auricular-ventricular, and intra-ventricular.

Sino-auricular block is rare, but occurs under the same general circumstances as the ordinary type of heart block. In this condition the impulse is blocked before it reaches the auricles. It is difficult to distinguish the complete dropping of one heart beat due to a block at the sinio-auricular node from one dropped at the auricular-ventricular node. However, in sino-auricular block, the pacemaker is not essentially disturbed, so that for one cycle neither auricles or ventricles contract. In the other condition a wave will be detected in the jugular vein due to the contraction of the auricles.

Auricular-ventricular heart block consists of retardation of the conduction of the stimulus for the heart beat from auricles to ventricles. It may be of any grade, from the slightest delay in conduction, known as first degree heart block, in which the heart is perfectly regular; and can be detected only with the electrocardiograph, showing a P-R interval beyond the normal limit of 0.2 seconds. The only physical finding that might lead one to suspect its presence is a gallop rhythm. Gallop rhythm is, however, more commonly associated with other cardiac conditions, i.e., hypertensive heart disease.

The recognition of second degree, or partial heart block, is usually not difficult. Auscultation reveals a fairly regular beat with sudden pauses coming more or less regularly. The rhythm is usually irregular to some extent except when the block is two to one or greater. It may be necessary to distinguish the slow rate of a two to one block from a normal bradycardia. Alteration of the rate from exercise, deep breathing, or vagal stimulation will have a gradual effect, while with heart block abrupt changes in the length of the heart cycle are likely to occur due to release of the block for a few beats, also on careful examination in this type of block evidence of auricular systole may be detected in the jugular vein; and over the precordium faint auricular contractions may be heard during the long diastolic pauses.

Treatment is not indicated for first or second degree heart block, the underlying disease should be treated if possible. If digitalis is the cause of the block it should be omitted for a few days.

Complete heart block (Adams-Stokes Disease): In complete block the auricles and ventricles contract entirely independently of each other. The beat is slow, regular, at the rate of about 30. If the rate falls to 20 or 15, attacks of convulsions and syncope occur. (Adams-Stokes Disease).

Complete heart block, like the other forms of heart block, is frequently the result of coronary heart disease, with or without hypertension, occasionally luetic heart disease, and as an accompaniment of rheumatic fever or diphtheria. It may be congenital.

The bedside diagnosis is usually simple, the heart is beating at a slow, fairly regular beat, rate of 20 to 35 per minute; slight irregularities may be present. Deep breathing, vagal stimulation and exercise have very little influence. During the long diastolic pause, the distant sounds of auricular contractions are usually audible over the precordium, associated with auricular waves in the jugular pulse.

A distinctive sign not heard in partial heart block is that on auscultation the first heart sound becomes accentuated, muffled, or reduplicated in various cycles, due to the changing relationship of auricular and ventricular contraction.

Only rarely does the circulation fail in the presence of complete block and if it should occur, digitalis is indicated just as in other forms of congestive heart failure. The serious danger in this disorder is the attacks of asystole. Depending on the length of the attacks, whether a few seconds, a minute, or longer, the patient will be dizzy, faint, have convulsive seizures, or sudden death. The attacks may occur rarely or frequently, they come without warning and the exciting cause is usually unknown. If the attacks of asystole are rare, preventive medication is impractical. The most valuable remedy for the attack is adrenalin hypodermically. Adrenalin increases the irritability of the ventricular pacemaker, so that some reflex influence is inhibited that might otherwise have produced an asystole. Given in doses of 0.5 cc. to 1.0 cc. it controls the attacks from one to two hours. For more prolonged action, attacks coming hours or days apart, ephedrin sulphate, three-eighths grain($3/8$), three times daily by mouth is usually very effective. This can be given for long periods of time. Barium chloride, one-half grain ($1/2$), three or four times daily by mouth, is a distinct help in some cases. Once complete heart block is established, it is rare for the normal mechanism to return.

A type of heart block that does not interfere with the rhythm of the heart is known as "Bundle Branch Block" in which the impulses are blocked in the left or right bundle of His. One ventricle contracts a brief instant before the other, the heart remaining regular.

Electrocardiograph tracings are required to show this type of block. Treatment is directed at the underlying cause, usually arteriosclerosis of the coronary arteries. The prognosis is quite grave.

PULSUS ALTERNANS

Pulsus alternans is a serious disorder of the heart muscle in which there is alteration of weak and strong pulse waves, with the rhythm remaining perfectly regular. It may be detected at the radial pulse rate, but is best recognized on taking the blood pressure. On taking the systolic reading the sounds will alternate in intensity, or the stronger beat will be heard for five or ten millimeters before both beats are heard. The treatment is that of the underlying heart condition. It offers a serious prognosis, except when it occurs during paroxysmal tachycardia.

GOOD HEALTH EXHIBIT USES THREE METHODS OF APPEAL

There are three methods of absorbing health information—by listening, reading and just looking, Thomas G. Hull, Ph.D., explains in his article "Looking at Health" which appears in the April *Hygeia*. A well planned health exhibit employs all three.

More than 25,000,000 people annually attend state and county fairs, carnivals and expositions in this country. These ready-made audiences in receptive moods offer opportunities of which health educators have been taking advantage for many years. The visual impression, they have found, is more lasting than the spoken or written word. Multiply that some millions of times, and the cumulative value of health exhibits can be imagined.

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SENATOR BURKE'S IDEA OF PUBLIC SERVICE

By sponsoring and securing the passage of the osteopath bill in the United States Senate, Senator Burke has rendered a disservice to the American people. Mr. Burke will have to his political discredit the distinction of opening the door to cultism on a national scale. Until now, and in spite of persistent "pathic" lobbies, regular medicine was the only logical and officially recognized system of treatment for federal compensation cases. The cults remained a local evil feeding on public ignorance in basic principles of physiologic processes. Lobbies in the state legislatures were too strong and domestic law-makers too weak to resist the vigorous attempts on the part of pushers and twisters to horn in on scientific medicine. Congressmen, however, were, until now, too intelligent to succumb to the pressure.

What possessed Senator Burke to become the promoter of the infamous bill is difficult to conceive. The Senator is neither ignorant nor fanatic. He knew well the implications of the bill and was fully aware of the dangers it carried to the health of the citizens. Mr. Burke in his campaign for office promised the voters that if elected he would do all within his power to protect the interests of his constituents. Furthermore Mr. Burke was elected on a platform that purported to protect the "Forgotten Man." Mr. Burke also knows that it is the "forgotten man" who is usually the prey of the cultist. If Senate file No. 1233 is Mr. Burke's idea of public benefaction his method of reasoning betrays an incurable error in judgment.

Again, when the Senator first introduced the bill he received many protests from physicians individually and officially from medical societies. These letters and telegrams pointed out carefully the possible evils of the proposed legislation. The American Medical Association in the interests of public good requested a hearing of the bill if and when it was to come before the Judiciary Committee. Was Mr. Burke so much interested in the passage of this bill that he feared open discussion? What did our Senator have in mind when in spite of the existing facts he made this statement to his colleagues in Committee?

"The representatives of the medical societies suggested an amendment which had been put into the bill as it now stands. Those representatives presumably speaking for all the national medical societies, have withdrawn their objection completely, and say that the bill is now all right."

What prompted our Senator to promote such vicious legislation or who the "representatives' were who said that "the bill is now all right" remains a mystery.

To the physicians of Nebraska Mr. Burke will long be remembered.

QUESTIONNAIRES HAVE A PURPOSE

The planning board of The Nebraska State Medical Association through the office of the Executive Secretary is making an effort to evaluate certain economic features in the practice of medicine in this state. Mr. Smith has sent out questionnaires covering some of the phases pertinent to this study. Although the replies thus far received are few in comparison with the total membership of the Association, the data obtained from the analysis offer interesting observations. Obviously the greater the number of the returns the greater will be the value of the study. The board is not trying to pry into anyone's business. The questionnaire is not to be signed.

It is only through collective effort that cumulative facts may be gathered to make such research of value. The time must come when doctors will realize that undertakings for the common good of all must be a cooperative affair.

Now comes the study of medical care initiated by the American Medical Association, which aims to gather pertinent data that in all probability will dampen the enthusiasm of the proponents of governmental interference in medical practice. Reformers who shout about the inadequacy of medical care of the American people should be definitely informed of what it would cost the taxpayers to make "adequate" care as they interpret the objective, available to all. We suspect strongly that there are few, very few people indeed, who do not obtain NECESSARY medical service. It is important, however, to submit this information in actual figures.

It will take effort and time on the part of every practising physician to make this study significant and reliable. But let no doctor who values his independence in medicine think that he cannot be bothered by blanks. If he follows the handwriting on the wall there is much more bother in store for him unless he puts in a little extra time and effort NOW, to resist the specter that is fast approaching the profession.

ASSOCIATION MATTERS

INSTALLATION OF THE PRESIDENT OF THE NEBRASKA STATE MEDICAL ASSOCIATION

Tuesday, April 26, 1938

DR. GEORGE W. COVEY, (Lincoln): Ladies and Gentlemen: Once more we come to one of the high points in our session. It seems to me that the ceremony we are about to take part in is a sort of time marker. Year after year the periods in medicine are marked off by the times when we have an annual session and have a ceremony of the installation of our new President. As one thinks about it, he is reminded of the line from the "Rubaiyat" which says: "The moving hand writes, and having writ, moves on."

Think how true that is with reference to our Medical Association. It is as if each of these officers here actually becomes a link in a chain which is never ending. It is a process of accretion by our Society as years go by. So it gives me pleasure at this moment to introduce to you our retiring President, Dr. Roy Fouts, who will speak to you at this time. (Applause).

INTRODUCTION OF THE PRESIDENT-ELECT

Dr. R. W. FOUTS, (Omaha): Borrowing the words of the ancient Roman gladiators, "We, about to die, salute you." My last official duty as your President will have been performed with the presentation of our incoming President.

The past year has been a busy one insofar as the activities of our State Medical Association are concerned. With the aid of scores of physicians in all parts of the state, giving unstintingly of their time in serving on committees and doing detail work, much has been accomplished. Much more remains to be done. There has never been a time in the history of our Association when so many demands were being made on it, by state and civic organizations, for counsel and guidance in matters pertaining to medical affairs. Our members have responded nobly to these demands with credit to themselves and the cause of organized medicine, and in so doing are providing the answer to the threat of socialized medicine.

The program, now well under way, needs the active support of every right thinking physician. I bespeak for my successor the same loyal support that you have given to me.

As President-elect, Dr. Davis has given much time and has traveled all over our state preaching the gospel of organized medicine. He has already exemplified his worthiness of the trust imposed on him. He is thoroughly imbued with the spirit of service.

It is now a sincere pleasure to present to him this emblem of his office, and to present to you your President, Dr. Homer Davis. (Applause).

PRESENTATION OF THE MEMBERSHIP CUP

DR. R. W. FOUTS, (Omaha): Mr. President: The Executive Secretary has for the second year conducted what he calls a Membership Derby. A review of last year's results proved it was worth while from a membership standpoint. This year the Cup has been won by the 10th Councilor District. Dr. Rork, I compliment you upon winning the beautiful Cup which is suitably engraved, and I am sure you will cherish it. (Applause).

DR. L. W. RORK, (Hastings): In behalf of the membership of the 10th Councilor District, I desire to express our gratification on securing the Cup. For your information, I might say there has been no particular drive for membership instituted in the District. However, there are several factors which I believe are definitely of interest. The Refresher Courses I would mention first. The Maternal and Child Health program is second. The Tubercular Survey is third, together with the activity that has been exhibited in the District by our Executive Secretary.

To me the Cup seems emblematical definitely of diligence on the part of the officers of the county societies and the cooperation of the members. To me, receiving the Cup at this time is particularly gratifying as, according to my announcement of about a year ago, I am retiring from the Council at the end of my term, Dec. 31st. It is gratifying that the Cup denotes the state of professional health in the District better than any words that I can give to you. I recommend also to you and to my successor in the Council, who has been certified by the 10th Councilor District, a continuation of this activity.

I thank you. (Applause).

AWARDING OF THE OLIVER WENDELL HOLMES TROPHY

Wednesday, April 27

DR. LLOYD O. HOFFMAN, (Omaha): Four years ago, Dr. Pollard, then head of the Department of Obstetrics and Gynecology at the University of Nebraska College of Medicine, conceived the idea of stimulating interest in maternal mortality by obtaining statistical information, and by awarding at each State Society meeting a Cup to the Councilor District which had the lowest maternal mortality in the preceding year. That has been awarded three years. Last year Dr. Conrad of the Seventh Councilor District received it, and again this year he is to receive it.

If this Cup is won three times, it becomes the permanent possession of the Councilor District by which it is received.

It is a great deal of pleasure to present this Cup again to Dr. Conrad. (Applause).

DR. A. A. CONRAD, (Crete): On behalf of the Seventh Councilor District, I wish to express my appreciation for this beautiful cup. We really do not believe we are any better obstetricians in that part of the country than the men in the rest of the state; but we do the best we can, and have had considerable good fortune in having this low mortality.

A MESSAGE FROM THE PRESIDENT

Homer Davis

In the past two or three years there has been a rapid evolution of improvement in organization of component county medical societies for the purpose of having scientific medical meetings. These societies have been organized according to geographical situations, medical centers and road conditions. Not all of us in the out-state can attend the annual meeting of the N. S. M. A. or the Omaha Midwest Clinical Meeting on account of leaving our practice or on account of expense. This leaves the local district meetings as the only source of contact with the best medical talent. It therefore puts a responsibility upon the officers of these local societies to make these programs attractive and well worth while.

It occurs to me that there should be some well meaning and well directed constructive criticism offered in regard to the programs offered. Many of these society program committees have already grasped the idea, some have not done so. Most of the medical programs in this state are after dinner evening programs. In putting up a program, some societies have found that interest is stimulated by changing the program committee at every meeting. The program committee is formed of just one doctor who is responsible to the society for the subject to be discussed and also for the speaker. In doing this job, please do not forget that the Speakers Bureau of the N. S. M. A. has been doing a good job and that this bureau has available qualified speakers ready for you on any subject.

This one doctor committee takes complete charge of the program, introduces his speakers and presides at the program part of the meeting. It may be his first responsibility in presiding. Anyway it helps to develop our younger men in responsibility.

Too many speakers and too many topics for a one evening program are not conducive to good meetings. Many a good speaker has become discouraged about going out in the state because he is not given time enough to discuss his subject thoroughly and to present the slides or movies which he has so carefully and painstakingly prepared.

A one man program presented and presided over by a one man committee is the ideal program.

There is one thing though that should be seriously considered. That is the fact that we are getting away from using our own local talent on the programs. Local talent should not be neglected for part of the program. It should be encouraged and developed especially in the young doctor. He should be selected and urged to bring in a short original paper or case report. This is important. It will develop the young doctor and increase interest in our State Association.

Then the one man program develops into a two man program planned and presided over by a one man committee, which after all, becomes the ideal program for our local societies, and which is best suited for Nebraska.

COMMITTEES

The following committees have been arranged by your President from the records of the Secretary-Treasurer and to conform, as near as possible, to the new By-Laws adopted at the last session of the House of Delegates. It is hoped that they will be approved by the Council.

As published in the June number of the N. S. M. A. Journal, all committees as to appointments and personnel are to be continued. You will notice that some committees have been increased in personnel. You will also notice that there are several new committees appointed according to the new By-Laws.

In making up your programs for scientific meetings in the various component and district societies for this coming year, your President asks you to give these several scientific committees a chance. A complete program for an evening scientific meeting is ready for you through the chairman of any of these scientific committees and the Speakers Bureau. These committees are anxious to get their work going through your scientific meetings. An evening spent in the consideration of any subject that comes under any one of these important committees is time well spent.

The most important committee of the scientific group is the Committee on Medical and Health Education. This committee is the Master Scientific Committee. All plans of the sub-scientific committees for educational programs for the physicians and for lay groups, also other activities, should be submitted by the chairmen of these sub-scientific committees to this Master Committee for approval. This is to avoid conflicting programs rather than to dictate as to the policy and the program of activity which each sub-scientific committee may wish to adopt.

It became necessary to have this arrangement of committees when Federal and State Funds came in to the program of the Nebraska State Medical Association. At the present time Federal and State Funds are available for use only through the Maternal and Child Health, the Venereal Disease and the Tuberculosis Committees.

NON-SCIENTIFIC COMMITTEES

Committee on Public Policy and Legislation

B. F. Bailey, Chairman	Lincoln
E. W. Rowe	Lincoln
J. F. Langdon	Omaha
J. W. Duncan	Omaha
Harry W. Benson	Oakland
The President	
The Secretary-Treasurer	

Sub-Committee on Public Policy and Legislation

District		
1.	J. Jay Keegan	Omaha
2.	Clayton Andrews, Chairman	Lincoln
3.	Chas. L. Hustead	Falls City
4.	John Buis	Pender
5.	C. G. Moore	Fremont
6.	R. E. Harry	York
7.	Harry J. Wertman	Milford
8.	Oscar W. French	Page
9.	Arthur W. Anderson	Lexington
10.	Earl F. L. Leininger	McCook
11.	Harvey L. Clarke	North Platte
12.	C. M. Pierce	Chadron

Scientific Assembly

J. W. Duncan, Omaha	1941
Morris Nielsen, Blair	1940
Roy H. Whitham, Lincoln, Chairman	1939
J. D. McCarthy, Imaha	1942
R. B. Adams, Lincoln	

Campaign Committee

E. S. Wegner, Chairman, Lincoln	1939

Insurance

Morris Nielsen, Chairman, Blair	1941
Robert D. Schrock, Omaha	1940
Frank A. Burnham, Arnold	1939

Journal and Publication

B. F. Bailey, Chairman, Lincoln	1941
A. F. Tyler, Omaha	1940
W. H. Heine, Fremont	1939

Medico-Legal

R. W. Fouts, Omaha	1939
O. R. Platt, North Platte	1940
R. B. Adams, Lincoln	1941

Medical Student Loan Fund

Morris Nielsen, Chairman, Blair	1940
A. P. Overgaard, Secretary, Omaha	1939
J. M. Woodward, Lincoln	1941

Advisory to Woman's Auxiliary

J. J. Keegan, Omaha	1939
Joseph Weinberg, Omaha	1939
O. J. Cameron, Omaha	1939

Business Committee of the Council

George Covey, Chairman, Lincoln	1939
Harry Benson, Oakland	1939
Russel Best, Omaha	1939
Claude Selby, North Platte	1939
R. B. Adams, Secretary-Treasurer, Lincoln Executive-Secretary, ex-officio	

Allied Professions

William Shearer, Chairman, Omaha	1939
Earle G. Johnson, Grand Island	1939
E. K. Steenburg, Aurora	1939

Credentials

R. B. Adams, Chairman	Lincoln
O. W. French	Page
E. E. Koebbe	Columbus
H. W. Francis	Bancroft
W. L. Shaw	Hastings

Library, Necrology and Records

A. P. Overgaard, Chairman, Omaha	1941
J. C. Waddell, Beatrice	1940
H. N. Morrow, Fremont	1939

Revision of Constitution

Claude A. Selby, Chairman, North Platte	1939
Earle G. Johnson, Grand Island	1939
Clayton Andrews, Lincoln	1939

SCIENTIFIC COMMITTEES MEDICAL AND PUBLIC HEALTH EDUCATION

(Master Scientific Committee)

W. P. Wherry, Chairman, Omaha	1939
J. D. McCarthy, Vice Chairman and Chairman Speaker's Bureau, Omaha	1941
George W. Covey, Lincoln	1943
George Misko, Lincoln	1942
A. L. Miller, Kimball	1940
W. J. Arrasmith, Grand Island	1944

Ex-officio Members (without the right to vote)

President
President-Elect
Secretary-Treasurer
Executive-Secretary
Speaker of the House
Editor of the Journal

Advisory Board

B. M. Riley, Dean, Creighton University Medical College
C. W. M. Poynter, Dean, State University Medical College
The Chairman of the following Committees:
- Speaker's Bureau Committee
- Cancer Committee
- Fracture Committee
- Convalescent Serum Committee
- Tuberculosis Committee
- Maternal and Child Health Committee
- Prevention and Amelioration of Deafness Committee
- Public Health Committee
- Planning Committee
- Conservation of Vision Committee
- Venereal Disease Committee
- Pneumonia Committee
- Hospital and Medical Standards Committee

Planning

E. W. Rowe, Chairman	Lincoln
F. L. Rogers	Lincoln
W. C. Becker	Lincoln

Maternal and Child Health

Earl Sage, Chairman, Omaha	1939
F. D. Ryder, Grand Island	1940
Clyde Moore, Omaha	1941
E. W. Hancock, Lincoln	1942
H. S. Morgan, Lincoln	1943

Tuberculosis

Claude Selby, North Platte	1939
A. L. Cooper, Scottsbluff	1940
E. W. Hancock, Chairman, Lincoln	1941
L. W. Rork, Hastings	1942
J. F. Gardiner, Omaha	1943
John F. Allen, Omaha	1944

Venereal Disease

C. C. Tomlinson, Chairman, Omaha	1939
W. H. Schmidtz, Omaha	1940
A. D. Munger, Lincoln	1941
B. H. Farner, Norfolk	1942
D. O. Hughes, Fairbury	1943

Prevention and Amelioration of Deafness

C. T. Uren, Chairman, Omaha	1939
E. E. Koebbe, Columbus	1940
J. J. Hompes, Lincoln	1941

Conservation of Vision

Earl B. Brooks, Chairman, Lincoln	1939
Chas. M. Swab, Omaha	1940
Eugene C. Foote, Hastings	1941
M. B. Wilcox, Holdrege	1942

Cancer

James F. Kelly, Chairman, Omaha	1939
J. M. Willis, McCook	1940
John Buis, Pender	1941
W. C. Harvey, Gering	1942
A. P. Synhorst, Grand Island	1943

Fracture

J. W. Martin, Omaha	1939
R. D. Schrock, Omaha	1940
J. E. M. Thomson, Chairman, Lincoln	1941
H. L. Minor, Falls City	1942
C. B. Edwards, Kearney	1943
George W. Sullivan, St. Edward	1944

Pneumonia

Rodney W. Bliss, Chairman, Omaha	1943
Earle Farnsworth, Grand Island	1942
D. H. Morgan, McCook	1941
Walter Benthack, Wayne	1940
Joseph Kuncl, Alliance	1939

Convalescent Serum

Floyd Clarke, Chairman, Omaha	1945
W. C. Harvey, Gering	1944
George B. Salter, Norfolk	1943
E. A. Watson, Grand Island	1942
E. G. Stevenson, North Platte	1941
E. P. Leininger, McCook	1940
C. M. Pierce, Chadron	1939

Hospitals and Medical Standards

Lucien Stark, Chairman, Norfolk
David T. Martyn, Columbus
Adolph Sachs, Omaha
Harry Everett, Lincoln
Geo. W. Prichard, Omaha

Public Health

G. E. Charlton, Chairman, Norfolk
J. C. Nielsen, Ingleside
L. T. Sidwell, Kearney

COUNCIL MEETING—APRIL 27, 1938

(Continued from June issue)

The second meeting of the Council was held at the Hotel Cornhusker in Lincoln, April 27, 1938, at 3:30 p. m. The meeting was called to order by President King. The following members were present: Drs. Bryson, Cooper, Douglas, Conrad, Rork, Boyer, Hompes, Brush, Overgaard, King. Drs. Adams, Selby, Davis and Mr. M. C. Smith were also present.

It was moved that the report of the Sub-Committee No. 2 on Planning by Dr. Rowe, which was read by Dr. Bailey, be recommended to the House of Delegates and accepted and placed on file. Seconded and carried.

Dr. Bryson moved that Dr. O. R. Platt be re-elected as a member of the Medico-Legal Advisory Committee for a term of two years. Seconded and carried.

The following budget was recommended for the year 1939:

Journal Fund $	1.50 per member
Medico-Legal Fund	1.00 per member
Executive Secretary, Salary and expense	5.00 per member
Salary of the Medico-Legal Advisory Chairman	
Salary of the Secretary	600.00

Councilor expense	360.00
Office expense of the Secretary	800.00
Report for the Annual Meeting	150.00
Campaign Committee	500.00
President's expense	100.00
Public Policy and Legislation Committee	100.00
Program Talent	600.00
Delegates to the American Medical Association	as submitted
Committee on Medical and Public Health Education	1,000.00
Medical Student Loan Fund	500.00 if available

Dr. Bryson moved that the budget be recommended to the House of Delegates. Seconded and carried.

It was moved and seconded that the Council adjourn. Carried.

COUNCIL MEETING—APRIL 28, 1938

The third meeting of the Council was held at the Hotel Cornhusker in Lincoln, April 28, 1938, at 9:30 a. m., after the House of Delegates had adjourned. The following members were present: Drs. Douglas, Bryson, Brush, Boyer, Hompes, Rork, Overgaard, Cooper, and King. Drs. Davis, Fouts, Selby, Miller, Adams and Mr. Smith were also present. The meeting was called to order by President King.

The following new Councillors were introduced to the Council:

Dr. M. O. Arnold, Ninth District.

Dr. H. S. Andrews, Tenth District.

Dr. Fred Wurtele, Eleventh District.

Dr. Boyer moved that the Council choose four men to act as a committee in the business affairs that would come before this Council and they are responsible to the Council, and the Chairman appoint a nominating committee of three members to bring in six names and the Council choose by ballot from those six names four to make up this committee. Seconded by Dr. Fouts. Carried.

The Chairman appointed the following committee: Drs. Boyer, Overgaard and Bryson.

Dr. Rork moved that the Council meet in Lincoln next year. Seconded and carried.

Dr. Hompes moved that the meeting be held on Sunday. Seconded and carried.

Dr. Bryson then gave the following report of the Nominating Committee:

Dr. Claude A. Selby, North Platte

Dr. George W. Covey, Lincoln

Dr. Russell Best, Omaha

Dr. F. W. Buckley, Beatrice

Dr. H. N. Morrow, Fremont

Dr. Harry W. Benson, Oakland.

The Council then proceded to ballot on the six candidates.

Dr. Boyer moved that the four highest be appointed to this business committee. Seconded and carried.

The four receiving the majority of votes were:

Dr. Claude A. Selby, North Platte

Dr. George W. Covey, Lincoln

Dr. Russell Best, Omaha

Dr. Harry W. Benson, Oakland.

Dr. Boyer moved that this committee be instructed to take over the duties as outlined in Chapter VIII of the proposed By-Laws except where they conflict with other constitutional committees. Seconded and carried.

It was moved and seconded that the Council adjourn. Carried.

HOUSE OF DELEGATES—SECOND SESSION

April 27, 1938

(Continued from June issue)

The second session of the House of Delegates was held at the Hotel Cornhusker in Lincoln, April 27, 1938, at 8:00 a. m. Thirty-six members were present. The meeting was called to order by President Davis.

The minutes of the first session of the House of Delegates were read by Secretary Adams. Dr. Overgaard stated that the fact that the Constitution as discussed and agreed upon at the special session of the House of Delegates had been officially introduced to lay on the table for a year should appear in the minutes of the first session. Dr. Overgaard then moved that these minutes as read and corrected be approved. Seconded and carried.

The minutes of the first Council meeting were read by Dr. Overgaard. It was moved that these minutes be accepted. Seconded and carried.

The report of the Committee on Public Policy and Legislation was called for. Dr. Bailey stated that a report was made to the Council in January and there was nothing further to report.

The report of the Sub-Committee No. 2 on Planning by Dr. Rowe was read by Dr. Bailey.

Dr. Wilcox moved that the following recommendation be made to the Revision Committee: In Article VII of the Constitution, Section 3 the words "by members of" be stricken. Seconded by Dr. Johnson. Carried.

Dr. Stark moved that the By-Law submitted by Dr. Rork be tabled. Seconded and carried.

It was moved and seconded that the House of Delegates adjourn. Carried.

HOUSE OF DELEGATES—THIRD SESSION

April 28, 1938

The third session of the House of Delegates was held at the Hotel Cornhusker in Lincoln, April 28, 1938, at 8:00 a. m. President Davis called the meeting to order. There were forty-seven members present.

The minutes of the second session of the House of Delegates were read by Secretary Adams. It was moved that these minutes be accepted. Seconded and carried.

A Report of the Committee on Nominations was called for. Dr. McGrath made the following report:

For President-elect: Dr. A. L. Miller, Kimball.

For Vice-Presidents: Dr. V. V. Smrha, Milligan; Dr. W. D. MacKechnie, Indianola.

For Councillors: Eighth District—Dr. W. J. Douglas, Atkinson; Twelfth District—Dr. A. L. Cooper, Scottsbluff.

For Delegate to the A. M. A.: Dr. R. W. Fouts, Omaha.

For Alternate Delegate to the A. M. A.: Dr. Claude A. Selby, North Platte.

For Committee on Journal and Publication: Dr. B. F. Bailey, Lincoln; Dr. W. H. Heine, Fremont.

For Medical Student Loan Fund Committee: Dr. J. M. Woodward, Lincoln.

For Committee on Medical Education and Hospitals: Dr. W. P. Wherry, Omaha.

Dr. Fouts moved that the report of the Nominating Committee be accepted. Seconded and carried.

Secretary Adams read the certifications of nominations for Councillors from the following districts:

Ninth District—Dr. M. O. Arnold, St. Paul.

Tenth District—Dr. H. S. Andrews, Minden.

Eleventh District—Dr. J. B. Redfield, North Platte.

Dr. Selby moved that Dr. Fred Wurtele of North Platte be nominated for Councillor of the Eleventh District. Seconded and carried.

It was moved that Dr. Rudolph Decker of Byron be nominated for Speaker of the House. Seconded and carried.

Dr. Thomson moved that nominations for Speaker of the House be closed. Seconded and carried.

Dr. Selby moved that the nominations be closed and the Secretary be instructed to cast the unanimous ballot of the House of Delegates for Dr. A. L. Miller for President-elect. Seconded and carried.

Dr. Nielsen moved that the Secretary be asked to cast the unanimous ballot of the House of Delegates for Dr. V. V. Smrha and Dr. W. D. MacKechnie for Vice-Presidents. Seconded and carried.

President Davis then appointed Dr. Fouts and Dr. Benson to bring in the President-elect.

Dr. Brush moved that the Secretary be asked to cast the unanimous ballot of the House of Delegates for Dr. W. J. Douglas for Councillor of the Eighth District. Seconded and carried.

Dr. Bryson moved that the Secretary be asked to cast the unanimous ballot of the House of Delegates for Dr. M. O. Arnold for Councillor of the Ninth District. Seconded and carried.

Dr. Shaw moved that the Secretary be asked to cast the unanimous ballot of the House of Delegates for Dr. H. S. Andrews for Councillor of the Tenth District. Seconded and carried.

It was moved that nominations for Councillor of the Eleventh District be closed and the House of Delegates proceed to ballot on these two candidates. Seconded and carried.

Dr. Wurtele received the majority of votes and was therefore declared Councillor of the Eleventh District.

Dr. Hohlen moved that the Secretary be asked to cast the unanimous ballot of the House of Delegates for Dr. A. L. Cooper for Councillor of the Twelfth District. Seconded and carried.

Dr. Overgaard moved that the Secretary be asked to cast the unanimous ballot of the House of Delegates for Dr. R. W. Fouts for Delegate to the A. M. A. and for Dr. Claude A. Selby as Alternate Delegate to the A. M. A. Seconded and carried.

Dr. Thomson moved that the Secretary be asked to cast the unanimous ballot of the House of Delegates for Dr. B. F. Bailey for a new term and Dr. W. H. Heine to fill the unexpired term on the Committee on Journal and Publication. Seconded and carried.

It was moved that the Secretary be asked to cast the unanimous ballot of the House of Delegates for Dr. W. P. Wherry for the Council of Medical Education and Hospitals. Seconded and carried.

It was moved that the Secretary be asked to cast the unanimous ballot of the House of Delegates for Dr. J. M. Woodward for the Medical Student Loan Fund Committee. Seconded and carried.

Dr. Covey moved that Dr. Nielsen be nominated to fill the unexpired term on the Committee on Student Loan Fund. Seconded and carried.

It was moved that the Secretary be asked to cast a unanimous ballot for Dr. Nielsen to fill the unexpired term on the Medical Student Loan Fund Committee. Seconded and carried.

Dr. Stark moved that the Secretary be asked to cast a unanimous ballot for Dr. Rudolph Decker for Speaker of the House. Seconded and carried.

President-elect A. L. Miller was presented to the House of Delegates. Dr. Miller gave a short talk in appreciation of the honor given him.

The minutes of the second Council meeting were read by Dr. Overgaard. It was moved that these minutes be accepted. Seconded and carried.

It was moved that the next annual meeting be held in Omaha. Seconded.

Dr. McGrath moved that the next annual meeting be held in Grand Island. Seconded. The results of the vote taken: Omaha 23—Grand Island 27.

The next annual meeting of the Nebraska State Medical Association will be held in Grand Island.

Dr. Benson moved that Lincoln be given a special vote of thanks for a splendid meeting and entertainment. Seconded and carried.

Dr. Bartholomew read a report making recommendations suggested to follow in line by the report of Dr. Ferris loaned to the State Medical Association by the United States Public Health Service to make a survey of this state and recommend to the State Association the needs of the state.

It was moved that all of the recommendations be concurred in except paragraph 10. Seconded and carried.

It was moved and seconded that the House of Delegates adjourn. Carried.

ANNOUNCEMENTS

A. M. A. Survey

The officers and House of Delegates of the American Medical Association at their meeting in San Francisco, June 13-17, 1938, are requesting, through every component county medical society of every state, that every doctor make a report on his free services to the poor. More information will be available to you through a bulletin to be issued through the office of the Executive Secretary.

This request is important and is issued for the purpose of procuring statistics to refute charges of inadequate medical care to the indigent of this country.

The charge has been made by the chairman of a very important committee organized under the Social Security Act. Organized medicine is trying to protect the doctor against the Federal control of the practice of medicine and against state medicine.

Postgraduate Course in Obstetrics, Gynecology and Pediatrics—July 11, 1938 to July 23, 1938 Creighton Medical College and the University of Nebraska College of Medicine

The (State) Department of Health and the Maternal and Child Health Committee of the Nebraska State Medical Association have inaugurated a postgraduate course of two weeks' duration for the benefit of physicians desirous of receiving instruction in the latest developments in Obstetrics, Gynecology and Pediatrics. The instructors will be qualified, accredited specialists, drawn from the faculties of Creighton University and the University of Nebraska.

Obstetrics and Gynecology

Lectures, clinics and demonstrations will be given, with special emphasis on the complications of pregnancy, labor and the puerperium. Opportunities will be afforded for making physical examinations in the hospital wards and dispensaries. Attendance in the delivery room will be provided so far as practicable.

Pediatrics

Emphasis will be placed on the medical and surgical diseases of children under 16 years of age. Infant feeding, the care of premature babies, the new-born, and demonstrations of the use of infant respirators will be stressed.

POSTGRADUATION INSTRUCTION OR CONTINUATION STUDY IN OBSTETRICS, GYNECOLOGY AND PEDIATRICS

July 11 to 23, 1938

SCHEDULE

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	University Hospital	Creighton and St. Joseph Hospital	University Hospital	Creighton	University Hospital	Creighton
9	Ob. Path. Autopsy Spec. Micros. Slides Dr. Eggers	Lecture on Obst. Dr. F. Murphy	Bateriology Smears Blood Work Culture Studies Dr. Gunderson	Gyn. Talk Dr. Grier	Ward Rounds Dr. P. Findley	Ped. Talk Dr. Clarke
10	Obst. Ward Rounds Dr. Sage	10 - 12 Obst. Disp. Dr. F. Murphy	Obst. Ward Rounds Dr. D. Findley	10 - 12 Gyn. Disp. Dr. Grier	Pediatric Ward Rounds Dr. H. Jahr	Creighton Ped. Disp. Dr. Hays
11	Ped. Ward Rounds Dr. Hamilton		Ped. Ward Rounds Dr. Henske		Antiluetic Treatment Dr. Cameron	
12 1	Lunches and Round-table Discussions—St. Joseph Hospital and University Hospital					
1	Obst. Clinic Dr. McGoogan	Treatment of Syphilis Dr. J. McMartin	Ped. Clinic Dr. Robertson	Endocrine Lecture Dr. Moran		Ped. Ward Walk Dr. H. Murphy
2	Obst. & Gyn. Talk (Manikin) Work Dr. C. Moon	Gyn. & Obst. Pathology Dr. Russum	Ped. Lecture Dr. C. Moore	Obst. Lecture Dr. Luikart		
3		Ward Rounds Obst. Dr. Luikart		Gyn. Ward Rounds Dr F. Murphy		

Laboratory Demonstrations

Laboratory demonstrations will be given in obstetrical and gynecological pathology, endocrinology and clinical bacteriology.

Round-table discussions conducted by obstetricians and pediatricians will be held during the luncheon hour in St. Joseph's Hospital and the University Hospital.

Mimeographed copies of lectures and demonstrations will be provided.

This is your opportunity to check up on your professional assets and liabilities. The course will be free—no charge for registration or tuition. Registration will be limited to ten.

If interested apply to Director of Division of National and Child Health, State Capitol, Lincoln.

"Maternal Care Complications" is a handy booklet issued recently by the Committee on Maternal Welfare under the editorship of Dr. Fred Adair. The Maternal and Child Health Division of the State Health Department in Lincoln has some copies for distribution. Anyone interested may write for a free copy to the Director of the Division on MCH, Capitol Bldg., Lincoln.

CORRECTION

The official figure for registration at the last annual session of the Nebraska State Medical Association was 508 and not 416 as reported in the last issue of the Journal.

AUXILIARY NEWS

OFFICERS

Mrs. C. W. Pollard, Omaha—President.

Mrs. Charles E. Abbott, Minden—First Vice-President.

Mrs. O. J. Cameron, Omaha—Second Vice-President.

Mrs. Herman F. Johnson, Omaha—Secretary.

Mrs. Elmer Hansen, Lincoln—Treasurer.

Directors (one year)—Mrs. S. O. Harris, Chappell; Mrs. C. D. Heine, Hooper. (Two years)—Mrs. Claude Selby, North Platte; Mrs. F. O. Teal, Lincoln.

Advisory Committee—Dr. J. Jay Keegan, Dr. Joseph Wernberg, Dr. O. J. Cameron.

Omaha World-Herald.

MRS. C. W. POLLARD
President of the Woman's Auxiliary to the N. S. M. A.

The President Announces Committee Appointments

Chairmen of Standing Committees — Mrs. Charles E. Abbott, Minden, Organization and Membership at Large; Mrs. J. E. Gelow, Grand Island, Program and Health Education; Mrs. E. S. Wegner, Lincoln, Public Relations; Mrs. C. Fred Ferciot, Lincoln, Press and Publicity; Mrs. W. W. Arrasmith, Grand Island, Hygeia; Mrs. Lucien Stark, Norfolk, Legislation; Mrs. J. Jay Keegan, Omaha, Exhibits; Mrs. Morris Nielsen, Blair, Finance; Mrs. Floyd Rogers, Lincoln, Historian; Mrs. C. W. M. Poynter, Omaha, Parliamentarian; Mrs. Earl Farnsworth, Grand Island, Mrs. J. Mac. Woodward, Lincoln, Pensions; Mrs. Harry E. Flansburg, Lincoln, Resolutions.

Delegates to A. M. A. Auxiliary — Mrs. C. Fred Ferciot, Lincoln; Mrs. E. S. Wegner, Lincoln; Mrs. James Kelly, Omaha.

MRS. C. C. TOMLINSON
President of the Woman's Auxiliary to the A. M. A.

Alternates—Mrs. Frank Conlin, Omaha; Mrs. Manuel Grodinsky, Omaha; Mrs. Earl Farnsworth, Grand Island.

NEWS and VIEWS

Sunday, June 12, a public celebration was held at Cedar Bluffs, honoring Dr. and Mrs. A. E. Stuart on their golden wedding day. Dr. Stuart recently completed fifty-two years as a practicing physician in Cedar Bluffs and the surrounding community.

Dr. A. E. Cook was honored by his fellow physicians in northeast Nebraska at a meeting in Randolph, June 7, of the Dakota, Dixon, Cedar, Thurston and Wayne County Medical society, in recognition of forty years of practice. He has now retired from active practice.

Drs. E. W. Schultz and L. P. Gebhardt of Stanford university, who a year ago announced a potential protector against infantile paralysis in a zinc sulfate solution, stated recently that further investigation convinced them it robbed humans of the sense of smell. The results, they said, notably the subsequent anosmia, moves them "to sound a word of caution against the further use of the zinc sulfate in man until more is known about the mechanism underlying the protection (against poliomyelitis) in monkeys."

Arrangements are being completed by the state department of health for the establishment of a demonstration district health unit in Madison, Wayne, Stanton and Pierce counties with headquarters at one of the four county seats, it was announced Friday by Dr. J. T. Googe, North Platte, assistant local health administrator. Units already have been formed for Scotts Bluff, Banner and Morrill counties, Lincoln, Keith and Perkins counties, and Richardson, Pawnee, Nemaha and Johnson counties.

With physicians of the state assisting, 142 crippled children were examined in the special clinic at Chadron sponsored by the Elks club and the Nebraska state child welfare bureau. The clinic was under the direction of the Northwest Nebraska Medical society.

It is with pleasure that we record the election of our Past President, Dr. Roy Fouts, as vice speaker of the House of Delegates of the American Medical Association at its recent annual session in San Francisco.

Nebraska doctors giving papers at the American Medical Association meeting, San Francisco, June 13 to 17, 1938: Richard H. and G. Alexander Young, Omaha, "Treatment of the Psychoses With Hypoglycemia and Induced Convulsions;" A. E. Bennett, Omaha, "Horse Serum Neuritis" (Lantern and motion picture demonstration); Edwin Davis, Omaha, "Prostatectomy or Transurethral Prostatic Resection" (Lantern demonstration); C. Fred Ferciot, Lincoln, "Dashboard Fractures of the Patella (motion picture demonstration); James F. Kelley, Omaha, "The Roentgen Treatment of Acute Peritonitis and After Infections With Mobile Apparatus" (Lantern demonstration). The following are participating in:

Scientific Exhibits

Manuel Grodinsky and Edward Holyoke, Omaha, "Fascial and Fascial Spaces of Head, Neck and Adjacent Regions and Their Relation to Infections."

R. Russell Best and N. Frederick Hicken, Omaha, "A Nonoperative Method for Removal of Residual Hepatic or Common Duct Stones."

A. E. Bennett, Avis Purdy and Helen Jordan, Clarkson Memorial Hospital, Omaha, "History and Development of Modern Psychiatric Nursing." (Motion pictures and charts).

J. E. M. Thomson and C. Fred Ferciot, Lincoln, "Surgical Treatment of Comminuted Fractures of the Patella." (Films, models, drawings)

James F. Kelly and D. Arnold Dowell, Omaha, "Roentgen Treatment of Acute Peritonitis and Other Infections with Mobile Apparatus." (Exhibit, charts, case histories).

STATE HEALTH DEPARTMENT NOTES

Speakers' Bureau

The following addresses have been arranged through the Speakers Bureau of the Educational Committee of the Nebraska State Medical Association, May 16 to June 15, inclusive.

LAY ADDRESSES

May 24, Wahoo, High School Girls—Dr. Olga Stastny, Omaha, "Venereal Disease Problems."

May 31, Lincoln, 4-H Club—Dr. Paul Bancroft, Lincoln, "Safety From Disease."

May 31, Omaha, Parent Teachers Association, Dundee School—Dr. Herman Jahr, Omaha, Dr. Richard Young, Omaha, "Child Behavior."

—J. D. McCarthy, M. D.,
Chairman of Speakers' Bureau.

Vital Satistics

The total number of babies born in Nebraska during 1937 was 22,256, compared with 23,799 during 1936, or a reduction from 17.4 to 16.3 per 1,000 population, according to the state department of vital statistics.

Male babies born in 1937 were 11,461 compared with 12,175 in 1936 and female 10,795 compared with 11,624 in 1936. 21,806 babies are white, compared with 23,440 white children in 1936, 180 black compared with 201 the previous year. There were 502 still-births.

Nebraskans have a longer life expectancy now than in past years, the annual report compiled by the state division of vital statistics revealed today.

Average of death last year of 12,400 Nebraska residents was 57.2 years as against 56.4 for 1936, the previous peak, or a difference of .8. There were 485 fewer deaths in 1937 compared to 1936.

Heart disease was the principal cause of death, again, with a toll of 2,534 persons. Cancer was responsible for 1,557 deaths.

Other major causes of death were cerebral hemorrhage and apoplexy, 1,210; nephritis, 867; pneumonia, 847; circulatory diseases, 721; influenza, 564; diabetes, 357, and tuberculosis, 261. Influenza mortality increased markedly over 1936 when the total was 293.

Suicides numbered 275 last year; homicides, 27.

Heat deaths dropped to 20 during 1937 compared with 122 during 1936. Deaths from freezing declined from 15 to five.

Airplane accidents cost six lives during both 1936 and 1937. Automobile fatalities increased from 290 to three hundred, but total accidental deaths declined from 1,106 to 957.

Infantile paralysis deaths were 44.

A. M. A. Registered Hospitals in Nebraska

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Bassinets	Number of Births	Average Census	Admissions
Ainsworth, 1,378—Brown							
Ainsworth Hospital ----	Gen	Part	28	3	121	10	636
Alliance, 6,669—Box Butte							
St. Joseph's Hosp. -----	Gen	Church	80	12	148	63	1671
Arnold, 899—Custer							
Arnold Hospital -------	Gen	Indiv	15	3	32	5	165
Auburn, 3,068—Nemaha							
Auburn Hospital ------	Gen	Indiv	10	4	21	4	177
Tushla Gen. Hospital---	Gen	Indiv	10	4	50	5	243
Aurora, 2,715—Hamilton							
Aurora Hospital -------	Gen	Indiv	16	8	19	7	226
Beatrice, 10,297—Gage							
Beatrice Sanitarium ---	Gen	Indiv	20	4	--	--	---
Lutheran Hospital -----	Gen	Church	45	8	95	20	705
Mennonite Deaconness Home and Hosp. ----	Gen	Church	30	10	195	23	800
Broken Bow, 2,715—Custer							
Broken Bow Hospital --	Gen	Indiv	35	4	4	8	318
Cambridge, 1,203—Furnas							
Republican Val. Hosp.--	Gen	Indiv	25	2	15	5	206
Chadron, 4,606—Dawes							
Chadron Mun. Hosp. --	Gen	City	23	7	30	10	504
Columbus, 6,898—Platte							
Lutheran Good Samaritan Hospital -------------	Gen	Church	30	5	181	18	1630
St. Mary's Hosp. ------	Gen	Church	125	12	143	40	1422
David City, 2,333—Butler							
David City Hosp. ------	Gen	Church	13	4	27	4	230
Fairbury, 6,192—Jefferson							
Fairbury Hosp. --------	Gen	Indiv	15	4	58	9	414
Falls City, 5,787—Richardson							
Falls City Hosp. -------	Gen	Indiv	30	10	15	9	340
Ft. Crook, 75—Sarpy							
Station Hospital ------	Gen	Army	50	--	--	42	1106
Grand Island, 18,041—Hall							
St. Francis Hospital ---	Gen	Church	135	10	194	57	1751
Hartington, 1,568—Cedar							
St. John's Hosp. -------	Gen	Indiv	16	6	7	5	211
Hastings, 15,490—Adams							
Mary Lanning Memorial Hospital -------------	Gen	NPAssn	85	15	204	50	1946
Holdrege, 3,263—Phelps							
Holdrege Hospital -----	Gen	Indiv	18	5	33	7	271
Imperial, 946—Chase							
Imperial Com. Hosp. ---	Gen	NPAssn	15	4	88	8	462
Ingleside, 1,699—Adams							
Hastings St. Hosp. ---	Ment	State	1550	--	--	1529	275
Rated capacity 1,406							
Kearney, 8,575—Buffalo							
Good Samaritan Hosp.--	Gen	Church	53	12	110	22	935
Hospital for the Tuberculous ----------------	TB	State	160	--	--	150	187
Lincoln, 75,933—Lancaster							
Bryan Mem. Hosp. -----	Gen	Church	100	14	296	84	2410
Green Gables, Dr. Benj. F. Bailey Sanatorium----	Gen	Corp	115	4	16	110	724
Lincoln Gen. Hosp. ----	Gen	City	145	25	374	99	3242
Lincoln St. Hosp. ----	Ment	State	1196	--	--	1229	214
Rated capacity 900							
Nebraska Orthopedic Hospital -----------	Orth	State	110	--	--	97	166
St. Elizabeth's Hosp.---	Gen	Church	175	25	350	112	4455
Veterans Admin. Facility ----------------	Gen	Vet	202	--	--	183	1333
Loup City, 1,446—Sherman							
Loup City Hosp. ------	Gen	Indiv	10	4	39	6	290
Lynch, 498—Boyd							
Sacred Heart Hosp.-----	Gen	Church	18	3	22	5	212
McCook, 6,688—Redwillow							
St. Catherine of Sienna Hospital ------------	Gen	Church	60	10	114	24	985
Minden, 1,716—Kearney							
Seeley Hospital --------	Gen	Indiv	12	10	62	6	285
Nebraska City, 7,230—Otoe							
St. Mary's Hospital ----	Gen	Church	50	15	174	28	871
Norfolk, 10,717—Madison							
Lutheran Hospital -----	Gen	Church	75	5	183	28	1055
Norfolk St. Hosp. ----	Ment	State	1060	--	--	1053	111
Rated capacity 950							
Our Lady of Lourdes Hospital -----------	Gen	Church	30	5	62	12	476
Verges Sanitarium -----	Gen	Indiv	30	5	39	22	190
North Platte, 12,061—Lincoln							
St. Mary's Hospital ----	Gen	Church	64	10	108	38	1059
Oakland, 1,433—Burt							
Oakland Com. Hosp. ---	Gen	Indiv	10	3	46	5	197
Omaha, 214,006—Douglas							
Bishop Clarkson Memorial Hospital ------------	Gen	Church	138	12	243	98	3179
Creighton Memorial St. Joseph's Hospital ----	Gen	Church	362	33	787	218	7587
Douglas Co. Hospital ---	Gen	County	412	12	111	381	2968
Douglas Co. Psychiatric Hospital ----------	Unit of Douglas County Hospital						
Evangelical Covenant Hospital ---------------	Gen	Church	86	16	253	39	2603
Immanuel Deaconess Institute ----------------	Gen	Church	118	24	468	88	3877
Lutheran Hospital ----	Gen	Church	111	8	145	49	1560
Nebraska Methodist Episcopal Hosp. and Deaconess Home --------	Gen	Church	176	24	411	110	4211
Nicholas Senn Hosp. --	Gen	NPAssn	80	12	185	66	4084
St. Catherine's Hosp.---	Gen	Church	140	25	382	85	2962
Station Hospital ------	Gen	Army	8	--	1	5	199
University of Nebr. Hospital ---------------	Gen	State	210	20	422	178	3558
Ord, 2,226—Valley							
Ord Hospital ---------	Gen	Indiv	15	2	6	6	215
Oxford, 1,155—Furnas							
Oxford Gen. Hosp. ----	Gen	Corp	14	5	22	6	327
Pawnee City, 1,573—Pawnee							
Pawnee Hospital -----	Gen	Indiv	26	4	70	15	626
Scottsbluff, 8,465—Scotts Bluff							
Fairacre Hospital -----	Gen	Indiv	25	6	201	23	850
West Nebraska Methodist Episcopal Hosp. ----	Gen	Church	65	12	177	43	1555
Seward, 2,737—Seward							
Seward Clinic Hospital--	Gen	Part	20	5	24	10	386
Seward Hospital ------	Gen	Indiv	15	6	37	4	131
Sidney, 3,306—Cheyenne							
Roche Hospital -------	Gen	Indiv	12	4	48	8	351
Taylor Hospital ------	Gen	Indiv	20	5	57	5	249
Stuart, 763—Holt							
Wilson Hospital ------	Gen	Indiv	20	3	33	13	508
Valentine, 1,672—Cherry							
General Hospital ------	Gen	Indiv	15	5	30	8	443
Wahoo, 2,689—Saunders							
Community Hospital --	Gen	Indiv	18	6	74	11	584
Winnebago, 653—Thurston							
Winnebago Indian Hospital ---------------	Gen	IA	63	9	78	32	883
York, 5,712—York							
Lutheran Hospital ----	Gen	Church	50	10	80	19	837
York Clinic and Clinic Hospital ------------	Gen	Part	12	6	23	3	156
Related Institutions							
Atkinson, 1,144—Holt							
Atkinson Gen. Hosp. --	Gen	Indiv	8	3	2	2	63
Axtell, 328—Kearney							
Bethphage Inner Mission --------------	MeDe	Church	145	--	--	140	9
Beatrice, 10,297—Gage							
Nebr. Institution for Feebleminded -----	MeDe	State	1373	--	--	1319	130
Rated capacity 1,370							
Beemer, 571—Cuming							
Beemer Hospital ------	Gen	Indiv	10	2	12	1	57
Dalton, 453—Cheyenne							
Pioneer Mem. Hosp. --	Gen	Indiv	10	3	23	3	83
Farnam, 394—Dawson							
Reeves Mem. Hosp. ---	Gen	Indiv	12	3	66	3	984
Fremont, 11,407—Dodge							
Lutheran Good Samaritan Hospital ------------	Gen	Church	25	5	107	13	771
Friend, 1,214—Saline							
Warren Mem. Hosp. --	Gen	City	11	4	81	5	175
Geneva, 1,662—Fillmore							
Geneva Gen. Hosp. ----	Gen	Indiv	15	6	-	Estab.1937	
Genoa, 1,089—Nance							
Emergency Hospital ---	Gen	Part	4	3	14	1	110
Hastings, 15,490—Adams							
Dr. Egbert Hospital --	Gen	Indiv	10	2	--	--	--
Hebron, 1,804—Thayer							
Blue Valley Hospital --	Gen	Indiv	20	5	35	8	480
Kimball, 1,711—Kimball							
Kimball Hospital -----	Gen	Part	10	4	16	4	224
Lexington, 2,962—Dawson							
Lexington Community Hospital ------------	Gen	Corp	20	6	93	9	375
Lincoln, 75,933—Lancaster							
Nebraska State Penitentiary Hospital ------	Inst	State	24	--	--	12	303
Milford, 832—Seward							
Nebraska Ind. Home--	Inst	State	12	11	40	3	41
Nebraska Soldiers and Sailors Home Hosp.--	Inst	State	58	--	--	45	50
Odell, 472—Gage							
Odell Gen. Hospital ---	Gen	Indiv	9	3	36	7	248
Omaha, 214,006—Douglas							
Salvation Army Women's Home and Hosp. ----	Mat	Church	56	15	75	47	109
Orchard, 505—Antelope							
Orchard Hospital -----	Gen	Indiv	7	3	2	1	83

A. M. A. Registered Hospitals in Nebraska (cont.)

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Bassinets	Number of Births	Average Census	Admissions
Plainview, 1,216—Pierce							
Plainview Gen. Hosp.	Gen	NPAssn	7	2	13	2	132
Stratton, 663—Hitchcock							
Dr. Stewart's Private Hospital	Gen	Indiv	13	3	13	3	137
Sutherland, 753—Lincoln							
Sutherland Hospital	Gen	NPAssn	10	4	15	3	171
Sutton, 1,540—Clay							
Sutton Hospital	Gen	Indiv	12	2	20	3	239
Tecumseh, 1,829—Johnson							
Tecumseh Hospital	Gen	Indiv	10	3	23	4	164
Tilden, 1,106—Madison							
Tilden Hospital	Gen	Indiv	7	2	6	3	116
Walthill, 1,162—Thurston							
Dr. Picotte Mem. Hospital	Gen	Indiv	12	4	4	3	101
West Point, 2,225—Cuming							
St. Joseph's Home and Hospital	Inst Gen	Church	16	2	56	9	380

Summary for Nebraska:

	Number	Beds	Average Census	Admissions
Hospitals and sanatoriums	69	8,277	6,774	79,921
Related institutions	30	1,984	1,663	6,173
Totals	99	10,261	8,437	86,094
Refused registration	17	430		

"THE DOCTOR"

Now in a Permanent Home

Sculpticolor of Fildes' Masterpiece Goes to Rosenwald Museum

The $150,000 reproduction of the Sir Luke Fildes masterpiece "The Doctor," first shown by the Petrolagar Laboratories at Chicago's Century of Progress Exposition in 1933, was recently presented by its owners to the new Rosenwald Museum of Science and Industry in that city.

Following the two World's Fairs, "The Doctor" exhibit went on a tour of 50,000 miles and was viewed by over five million people in eighteen principal cities throughout the country.

Designed to remind the public of the importance of the family physician, it required the full time of the late Chicago sculptor, John Paulding, and the noted artist, Rudolph Ingerle, and a large corps of assistants, and took nearly a year to complete.

In its new location in the Rosenwald Museum it will be seen by millions of visitors annually.

TUBERCULOSIS ABSTRACTS

PSYCHOLOGICAL ASPECTS OF TUBERCULOSIS

Being able to say, "I had tuberculosis for four years and recovered" aided the author in securing the confidence of patients in a large tuberculosis sanatorium. The purpose of her investigation was to discover what mental hygiene and psychology had to offer in speeding the recovery of tuberculous patients.

Loss of Equilibrium

The condition of the tuberculous person is one primarily of loss of equilibrium—first of his body chemistry, and then of his family situation, his job, and his whole mental attitude. A financial problem is almost inevitably present. All of the patient's human relationships are shifted. The husband or wife, the parent or child, the lover or the beloved, the friend, the business associate, the employer or his subordinates—all take on a different aspect. The patient must think differently not only of them, but of himself. He must literally make himself over.

This can happen only gradually, through the continued responses made to the new situation. Our personalities cannot be changed overnight, but they are built up by using our various abilities, just as muscles are developed through exercise. The abilities are ours by inheritance, but what we do with them is our own responsibility. No magical power from the outside can do for a man what he himself must bring about. Psychology can help him to learn how this "will to live" as William James once called it, can be used to help and not to hinder.

Emotion, as the word implies, is a moving force. Energy in the organism means increased metabolism and discharge of nervous impulses. Emotional states lead to activity of the organism somewhere, either externally or internally. If activity of the body be curtailed as in tuberculosis, energy is discharged in worry, fretting and anxiety.

The Patient's Cheerfulness

The apparent well-being which so often accompanies tuberculosis is frequently a cloak for hidden fear; exaggerated cheerfulness may be a compensatory mechanism. Probe beneath the gay and hopeful exterior of the tuberculous person and one may find submerged feelings of dread and despair.

The answer to the emotional problem is, in brief, first to recognize the emotional source or cause of the disturbance, and then to use the released energy in some way which will bring full satisfaction. For the tuberculous patient, achievement is far more difficult than it is for the healthy individual. He is, moreover, denied the ordinary relief of moving from place to place, with its variation of social contacts, and the help of a change of occupation by which pent-up restless feelings may be worked off.

All of us need some central stabilizing influence to which we can refer the meaning of our lives. Religion is such a stabilizer, and its therapeutic influence should be utilized.

Psychology must do more for the solving of life's problems than to offer a stone in place of bread. Psychology is valuable in understanding emotions and how to deal with them. One of the most potent emotions is fear. Its results may be seen clinically, as for example, in restlessness, loss of sleep, dilated pupils, disturbed digestion, secretory changes, and even in some cases increased blood pressure and temperature. It has been shown that the bodily effects of fear and rage involve increased activity of some of the endocrine glands, which in turn are innervated by the sympathetic division of the autonomous nervous system.

A practical way of aiding persons who are emotionally disturbed is to let them talk freely to someone they trust. "Well, how are you today?" cheerfully uttered by the busy doctor or nurse without pausing, will not invite the patient to unburden his deepest anxieties.

The principles of psychologic healing have been employed by the faith healer, the yogi, the medicine man, the quack doctor and the food faddist, and it has been noted that the more fantastic the fad, the more popular its psychologic appeal.

SOCIETIES

Filmore-Saline County Medical Society held its meeting at the City Park in Friend May 19. An enjoyable steak dinner was followed by a demonstration of a fracture symposium on the leg, ankle and foot, with slides and application of bandages and splints. Also shown were moving pictures of first aid to fractures of the arm, leg and back.

The demonstrations were conducted by Dr. Fred Ferciot, of Lincoln.

Fillmore county members were present 100 per cent and Saline county 63 per cent.

At a joint meeting of the **Five County Medical Society** and the **Madison Six County Medical Society** held Tuesday evening, May 24, in the ballroom of Hotel Norfolk, a Fourth Councilor district organization of the state medical society was organized with Dr. E. L. Brush of Norfolk as president. Dr. F. G. Dewey of Coleridge was named secretary.

The new district will include the eleven counties, Antelope, Stanton, Madison, Wayne, Cuming, Knox, Cedar, Dixon, Dakota, Thurston and Pierce.

Speakers on the program, which followed a 7 o'clock dinner, included Dr. John C. Sharpe, University of Nebraska, College of Medicine, who spoke on "Unusual Blood Conditions;" Dr. P. H. Bartholomew, director of health for the state of Nebraska, "Public Health Developments;" and Dr. Homer Davis, president of the Nebraska State Medical Association, "Organized Medicine." Wives of doctors were guests.

The committee in charge was headed by Dr. E. L. Brush, councilor for the Fourth district of the Nebraska State Medical Association.

The Merrick County ladies of the **Tri-County Medical Society** entertained at a one o'clock luncheon Thursday, May 19, at the home of Mrs. Fred Fouts assisted by Mrs. J. E. Benton, Mrs. A. D. Brown, Mrs. Enos and Mrs. R. R. Douglas, the last named of Clarks. Covers were laid for twenty. Grand Island, St. Paul, Wood River, Genoa and Fullerton were represented.

At a meeting of the **Keith-Perkins-Garden County Medical Society** held in Ogallala on Wednesday evening, May 11, Dr. Harris of Chappell and Dr. E. A. Harvey gave a report on the annual meeting of the Nebraska State Medical Associatoin held in Omaha.

The meeting followed a dinner served at the Duchess hotel where covers were laid for Dr. H. A. Blackstone of Lewellen, Dr. F. M. Bell and a guest of Grant, Dr. and Mrs. Harris of Chappell, Dr. and Mrs. S. M. Weyer and Dr. and Mrs. E. A. Harvey.

The spring meeting of the **Third Councilor District** of the state medical association was held in the legion hall at Falls City, Thursday, May 19. This meeting was the ninth postgraduate series and the program which followed was given by members of the faculty of the University of Nebraska College of Medicine: "Some Phases of Cardiac Diseases," F. Niehaus; "Pathological Physiology of Heart Disease," J. Perry Tollman; "Peri-anal Diseases." Russell Best; "Insulin and Metrazol Treatment of Schizophrenia," Richard Young; "First Aid in Handling Fractures of the Spine," J. E. M. Thompson, Lincoln; "Emergency Treatment of Compound Fractures," W. L. Sucha; "The Physician's Role in Public Health Education," R. W. Fouts.

The **Dakota, Dixon, Cedar, Thurston and Wayne Counties Medical Society** met at Randolph June 7, to honor Past President Dr. A. E. Cook. The scientific program consisted of: (a) Moving picture on Burns, illustrating the results of different methods of treatment, by Dr. F. J. Murray of Omaha; (b) The Nephritides, by Dr. E. J. Kirk of Omaha.

The regular meeting of the **Lancaster County Medical Society** was held May 3, 1938, with about thirty-five members present. Minutes of the previous meeting were read and approved.

Dr. J. Dewey Bisgard, of Omaha, was the guest speaker. His paper "Bone Growth Deformities" was illustrated with a fine series of lantern slides. Discussion followed by Drs. C. F. Ferciot and Fritz Teal.

Dr. H. S. Morgan moved that the Lancaster County Medical Society approve the film, "The Birth of a Baby" and recommend a general release. Seconded and carried. A letter confirming this motion was sent to the producers of the film.

Meeting adjourned 9:15 p. m.

—E. E. Angle, M. D., Secretary.

Secretary's Soliloquy

It takes time at medical meetings
And money to keep up our dues.
Sometimes in the hurry of practice
We may think some business we lose.

But when we have finished our practice
And apply for a harp and a crown,
And our efforts in Life have been assayed
And the fruits of those efforts are known,

Our mourners will cherish most dearly
Not our business: They'll value most then
The respect of our medical brothers
And our rating by medical men.

It isn't the dollars we garner
That fixes our place in the sun,
But our knowledge of medical problems
And the secrets of Science we've known.

So we gather at medical meetings
To hear latest medical news,
And men who attack special problems
And invited to tell us their views.

We discuss common problems of practice,
Each one of us taking a part,
And we come thus to know each his colleagues
And we take them right into our heart.

So we urge you to come to the meetings.
Help to make the society strong.
It's only for ethical doctors
And all of us ought to belong.

With State Medicine threatening our future
And practice abroad socialized,
It behooves every U. S. A. doctor
To see that we're well organized.

—G. E. Peters.

HUMAN INTEREST TALES

Dr. H. W. Shreck visited in Denver early in June.

Dr. J. F. Harding, formerly of Holdrege, has located in Kearney.

Dr. V. D. Douglas, formerly of Crab Orchard, has moved to Carleton.

Dr. Edward Person of Roundup, Montana, recently visited his mother in Wauneta.

Dr. G. W. Pugsley, Bayard, attended a medical meeting in Kansas City in May.

Dr. Earl R. Lee, formerly of Leigh, is now with the C. C. C. unit in Fort Collins, Colo.

Dr. Lucien Stark, Norfolk, was the principal speaker on a Memorial Day program in Wisner.

Dr. and Mrs. J. A. Henske have gone to Pottstown, Penn., for graduation exercises of their son, Joseph.

Dr. W. W. Arrasmith, for some years connected with the Grand Island Clinic, has located in Casper, Wyoming.

Dr. and Mrs. B. F. Bailey are planning to go to their summer home at Carmel-by-the-sea to spend their vacation.

Dr. J. H. Murray of Nampa, Idaho, recently visited old-time friends in Arnold. Dr. Murray was Arnold's first physician. This was in 1884.

Dr. and Mrs. Charles Moon of Omaha motored to Nashville, Tenn., in honor of graduation of their daughter from Ward-Belmont school, early in June.

Dr. A. J. Schwedhelm of Norfolk is the recipient of a degree of Master of Science in Surgery, from the Graduate School of the University of Pennsylvania.

Dr. Donald Pillsbury of Philadelphia recently visited his parents in Omaha. The doctor is associate professor in Dermatology at the University of Pennsylvania Medical School.

Dr. W. L. Ross, formerly of Omaha, presently located in Yakima, Washington, was recently elected president-elect of the Western branch of the American Urological Association.

Dr. Carleton B. Pierce, one time radiologist in the University and Methodist Hospitals in Omaha, has been appointed head of the Radiology Department of the Royal Victoria Hospital in Montreal.

Dr. Charles Ingham was appointed to the staff of the Norfolk State Hospital to assume duties July 15.

President-elect A. L. Miller delivered the Commencement address in Bridgeport June 2.

Dr. George E. Tooley of the Veterans Hospital at Lincoln was transfered to Wichita, Kansas, June 1.

Dr. H. B. Graves has located in Herman. The doctor took over the office of the late Dr. Cameron.

Dr. Philip Romonek was elected president, Dr. J. T. Maxwell, vice-president, and Dr. Howard Morrison, secretary-treasurer, of the Omaha-Council Bluffs Eye, Ear, Nose and Throat Society, at the annual meeting in May.

MARRIAGES

George Gatten, Ainsworth, to Miss Jane Larson of Newman Grove, May 29, at Ainsworth.

Dr. Osmyn Wm. McFarland, Baton Rouge, Louisiana, to Miss Rose Lolita Long, of the same city. Dr. McFarland is the son of Dr. W. I. McFarland of Hebron. The bride is the daughter of the late Huey Long, Governor of Louisiana. The wedding date was June 1.

Dr. Orville M. Moore of York, to Miss Dorothy Allen of Omaha. Dr. Moore is the son of the late Dr. O. M. Moore of York, the bride is the daughter of Mr. and Mrs. E. A. Allen of Ottumwa, Iowa. The wedding took place June 7 in Omaha.

BIRTHS

A son, to Dr. and Mrs. Paul M. Bancroft of Lincoln, the latter part of May.

DEATHS

Dr. A. W. Edmiston, Omaha, died at his home May 31, 1938, at the age of 81 years. Born in Clinton, Illinois, the doctor graduated from Rush Medical College in 1880. He came to Omaha in the middle eighties, and in 1888 he became a charter member of the Omaha Academy of Medicine, the forerunner of the organization which subsequently became the Omaha-Douglas County Medical Society. Dr. Edmiston had enjoyed a good practice until several years ago when he retired.

Surviving are a daughter and three grandchildren.

Dr. Charles R. Dever, Hastings, died May 25, 1938, at the age of 57. Dr. Dever was born in Stockdale, Ohio. He graduated from Ensworth Medical College in 1911. He practiced several years in Kansas and Missouri, and came to Nebraska in 1918 to become physician to the Soldiers' and Sailors' Home at Grand Island. In 1921 he became associated with the Hastings State Hospital, later locating at Hastings to do private practice. Dr. Dever was prominent in civic affairs and in business enterprises. The Dever Addition in the city of Hastings was developed under his sponsorship and bears his name.

The doctor died in St. Joseph, Missouri, whence he went early last fall when he became ill. Surviving are his widow, a brother and three sisters.

William E. O'Connor, Jr., Detroit, was found dead in his room, June 7, 1938, from a bullet wound. Dr. O'Connor was the son of Dr. W. E. O'Connor of Omaha. The young doctor was graduated from Creighton University Medical School in 1936 and was serving his internship in the Henry Ford Hospital at the time of his death.

MEDICAL SCHOOLS ANNOUNCE INTERNSHIPS

University of Nebraska Medical College

John Sheridan Anderson, Immanuel Hospital, Omaha, Nebraska.

LeRoy Judson Ayers, Clarkson Hospital, Omaha, Nebraska.

John Langdon Batty, Billings Memorial Hospital, Chicago, Illinois.

Wesly Lyman Bayles, University of Nebraska Hospital, Omaha, Nebraska.

Chris U. Bitner, University of Indiana Hospital, Indianapolis, Indiana.

Donald Berthold Blume, Hartford Municipal Hospital, Hartford, Connecticut.

Elmer Henry Brock, Milwaukee County General Hospital, Milwaukee, Wisconsin.

Emery Wilbur Carlson, Trinity Hospital, Kansas City, Missouri.

Vincent Gustof Cedarblade, University of Nebraska Hospital, Omaha, Nebraska.

Morgan Russell Colbert, Methodist Hospital, Omaha, Nebraska.

Wilber Dale Currier, Kings County-Long Island College Division, Brooklyn, New York.

William Albert Day, Hurley Hospital, Flint, Michigan.

Henry Livesey DeLong, Immanuel Hosptial, Omaha, Nebraska.

Leo L. Diamond, Jewish Hospital, Cincinnati, Ohio.

Raymond George Dornberger, University of Nebraska Hospital, Omaha, Nebraska.

Max Walter Emmert, St. Louis City Hospital, St. Louis, Missouri.

Garfield Francis Hawlick, Colorado General Hospital, Denver, Colorado.

Robert Max Heilman, Saint Luke's Hospital, Denver, Colorado.

Walter Ray Hill, University of Nebraska Hospital, Omaha, Nebraska.

Beryl Hirschfield, St. Anthony Hospital, Denver, Colorado.

William Esburn Holmes, Immanuel Hospital, Omaha, Nebraska.

Joe Edward Holoubek, University Hospital, Omaha, Nebraska.

Charles Chester Impey, Southern Pacific General Hospital, San Francisco, California.

Elgie Karl Johnson, University of Nebraska Hospital, Omaha, Nebraska.

Elmer Bernard Johnson, Kings County Hospital, Brooklyn, New York.

Franklyn Henning Johnson, St. Vincent's Hospital, Portland, Oregon.

Rush William Karrer, Immanuel Hospital, Omaha, Nebraska.

John Charles Kennedy, University of Minnesota Hospital, Minneapolis, Minnesota.

Adolphe Joseph Kerbel, St. Vincent's Hospital, Portland, Oregon.

Frank Joseph Klabenes, Nebraska Methodist Hospital, Omaha, Nebraska.

Frederick Dee Koehne, St. Vincent's Hospital, Toledo, Ohio.

Edward Ernest Lindell, University of Nebraska Hospital, Omaha, Nebraska.

Harold Haze Macumber, Cleveland City Hospital, Cleveland, Ohio.

William Robert Malony, Vancouver General Hospital, Vancouver, B. C.

Roy Martin Matson, Columbia Hospital, Milwaukee, Wisconsin.

Jack Eldred Maxfield, Henry Ford Hospital, Detroit, Michigan.

Donald Wesley Miller, United States Navy.

Herbert Charles Modlin, University of Nebraska Hospital, Omaha, Nebraska.

John James Modlin, Montreal General Hospital, Montreal, Quebec.

Orville Morris Moore, Vancouver General Hospital, Vancouver, B. C.

Orvis A. Neely, Methodist Hospital, Omaha, Nebraska.

Kenneth Anthony O'Connor, Fitkin Memorial Hospital, Neptune, New Jersey.

Paul Bryant Olsson, Swedish Hospital, Seattle, Washington.

William Osheroff, Queens General Hospital, New York, New York.

Charles Lieben Park, Yonkers General Hospital, Yonkers, New York.

Paul Milton Pedersen, California Hospital, Los Angeles, California.

Wendell Case Peterson, St. Joseph's Hospital, Omaha, Nebraska.

Roy Fredolph Pierson, Clarkson Memorial Hospital, Omaha, Nebraska.

Marvin Irwin Pizer, Cedars of Lebanon, Los Angeles, California.

Richard Carney Porter, Delaware Hospital, Wilmington, Delaware.

Lumir Louis Ptak, Provincial Royal Jubilee Hospital, Victoria, B. C.

Ross Campbell Pyle, San Diego County General Hospital, San Diego, California.

Albert Edward Raitt, Clarkson Hospital, Omaha, Nebraska.

Delbert Reed, Good Samaritan Hospital, Portland, Oregon.

Robert Reeder, Massachusetts General Hospital (3-1-39), Boston, Massachusetts.

Francis Lee Richards, University of Nebraska Hospital, Omaha, Nebraska.

Edward E. Rosenbaum, Jewish Hospital, St. Louis, Missouri.

Donald Ross, University of Nebraska Hospital, Omaha, Nebraska.

Herbert Eugene Salsburg, Vancouver General Hospital, Vancouver, B. C.

Willard George Seng, University of Nebraska Hospital, Omaha, Nebraska.

James Koken Shafer, United States Public Health Service, Seattle, Washington.

Alfred Paul Stappenbeck, Columbus Hospital, Seattle, Washington.

H. Ivan Stearns, California Hospital, Los Angeles, California.

Richard Mathias Still, Emanuel Hospital, Portland, Oregon.

Vean Melford Stone, Swedish Hospital, Seattle, Washington.

Edgar Elmer Struve, Gorgas Hospital, Ancan, Panama Canal Zone.

Frank Harold Tanner, University of Nebraska Hospital, Omaha, Nebraska.

Ross Van Valkenberg Taylor, Albany Hospital Albany, New York.

Ronald Wilmer Thompson, City Hospital of Akron, Akron, Ohio.

Olfert Winther Topp, St. Luke's Hospital, Jacksonville, Florida.

Floyd Glenn Warrick, Methodist Hospital, Omaha, Nebraska.

Clarence Roland Weber, St. Alexis Hospital, Cleveland, Ohio.

Murray Otto Westerbeck, Huntington Memorial Hosptial, Pasadena, California.

Clarence Swan Youngstrom, United States Public Health Service.

The Creighton University School of Medicine

Abramp, Anthony Edward, Immaculate Hospital, Jamaica, Long Island, N. Y.

Arnold, Arthur Atwood, St. Joseph's Hospital, Phoenix, Ariz.

Atene, Vincent Francis, Norwegian Hospital, Brooklyn, N. Y.

Barnes, Paul L., St. Elizabeth's Hospital, Lincoln, Nebr.

Bazzano, John James, St. Mary's Hospital, San Francisco, Cal.

Billion, Thomas, St. Joseph's Hospital, Phoenix, Ariz.

Booher, Robert Joseph, St. Louis City Hospitals St. Louis, Mo.

Brady, Charles Stuart, St. Joseph's Hospital, Kansas City, Mo.

Byrne, Edward Thomas, Providence Hospital, Seattle, Wash.

Carnazzo, William A., St. Joseph's Hospital, Omaha.

Cashman, James Earl, St. Joseph's Hospital, Phoenix, Ariz.

Colombo, Frank Victor, Thomas D. Dee Memorial Hospital, Ogden, Utah.

Condon, Daniel Jerome, St. Joseph's Hospital, Phoeniz, Ariz.

Davey, William Patrick, St. Joseph's Hospital, Omaha.

De Stefano, Felice James, Greenpoint Hospital, Brooklyn, N. Y.

Downey, Thomas, San Bernardino County Hospital, San Bernardino, Cal.

Eck, Daniel Burrows, Newark City Hospital, Newark, N. J.

Ekeler, Louis John, St. Elizabeth's Hosptial, Lincoln, Nebr.

Erickson, John Walfred, Swedish Hospital, Minneapolis, Minn.

Ficklin, George Clifford, Thomas D. Dee Memorial Hospital, Ogden, Utah.

Furze, Leonard Frank, Fresno General Hospital, Fresno, Cal.

Garibotti, Angelo David, St. Joseph's Hospital, Omaha.

Giovale, Silvio Joseph, Providence Hospital, Detroit, Mich.

Gorishek, Frank Joseph, St. Mark's Hospital, Salt Lake City, Utah.

Grabow, John Jurgen, Tacoma General Hospital, Tacoma, Wash.

Griffith, William O., St. Joseph's Hospital, Omaha.

Gross, Joseph Francis, St. Catherine's Hospital, Omaha.

Hamm, Leslie T., Wesley Hospital, Oklahoma City, Okla.

Hanlon, Russell Edward, United States Marine Hospital, San Francisco, Cal.

Haslinger, Joe Frederick, St. Vincent's Hospital, Portland, Oregon.

Hill, James N., St. Mary's Hospital, Kansas City, Mo.

Honke, Richard W., Vancouver General Hospital, Vancouver, B. C.

Jacobi, Rudolph Edward, Mercy Hospital, Council Bluffs, Ia.

Johnson, James Carl, Iowa Methodist Hospital, Des Moines, Ia.

Katzenstein, William, Good Samaritan Hospital, Cincinnati, Ohio.

Lane, Robert Daniel, Mary's Help Hospital, San Francisco, Cal.

La Rosa, Gasper Anthony, Coney Island Hospital, Brooklyn, N. Y.

McClain, William E., King County Hospital, Seattle, Wash.

McClay, Elmo Todd, Missouri Baptist Hospital, St. Louis, Mo.

McKay, Frances M., St. Joseph's Hospital, Omaha.

Makart, Carl Daniel, St. Vincent's Hospital, Los Angeles, Cal.

Martin, Worth Lee, San Diego County Hospital, San Diego, Cal.

Monteleone, Joseph, Greenpoint Hospital, Brooklyn, N. Y.

Moriarty, John Francis, St. Catherine's Hospital, Omaha.

Moriarty, Lauren Reiter, St. Joseph's Hospital, Omaha.

Mugan, Robert Charles, Little Company of Mary Hospital, Evergreen Park, Ill.

Nemec, Edward Charles, Providence Hospital, Seattle, Wash.

O'Connell, Hugh V., United States Naval Hospital, San Diego, Cal.

Parsons, Jack Francis, St. Anthony Hospital, Oklahoma City, Okla.

Perer, William Allen, Mercy Hospital, Pittsburgh, Pa.

Pleiss, Joseph Adrian, St. Joseph's Hospital, Omaha.

Porter, John Beck, Providence Hospital, Seattle, Wash.

Rafter, John Ralph, Kansas City General Hospital, Kansas City, Mo.

Raifman, Herman Moses, Coney Island Hospital, Brooklyn, N. Y.

Richards, Lewis Jones, Charity Hospital, New Orleans, La.

Shebl, Joseph James, St. Joseph's Hospital, Tacoma, Wash.

Simpson, James Colbert, Sacramento County Hospital, Sacramento, Cal.

Stephenson, Charles Ross, Binghamton City Hospital, Binghamton, N. Y.

Takenaga, Robert Toshiwo, Mercy Hospital, Council Bluffs, Ia.

Tascarella, James William, Queens General Hospital, Jamaica Long Island, N. Y.

Trombetta, Alexander, Holy Family Hospital, Brooklyn, N. Y.

Tsaparalis, Paul Constantine, French Hospital, San Francisco, Cal.

Tutronc, David Anthony, Meadowbrook County Hospital, East Hempstead, N. Y.

Uldall, Jorgen Jorgensen, St. Mary's Hospital, San Francisco, Cal.

Vaught, John Lester, Fresno County Hospital, Fresno, Cal.

West, Alroy Guy, Mercy Hospital, Council Bluffs, Ia.

Wiesler, Rudolph J., St. Joseph's Hospital, Omaha.

Wiesinger, Warren Edward, Alameda County Hospital, Oakland, Cal.

BOOKS RECEIVED

SYNOPSIS OF GENITOURINARY DISEASES by Austin I. Dodson, M. D., F. A. C. S., Richmond, Virginia. Professor of Genitourinary Surgery, Medical College of Virginia; Genitourinary Surgeon to the Hospital Division, Medical College of Virginia; Genitourinary Surgeon to Crippled Children's Hospital; Urologist to St. Elizabeth's Hospital; Urologist to St. Luke's Hospital and McGuire Clinic. Second Edition. With 112 Illustrations. St. Louis, Mo. The C. V. Mosby Company. 1937. 294 pages. Twenty-four mo. $3.00.

AN INTRODUCTION TO DERMATOLOGY by Richard L. Sutton, M. D., Sc. D., LL. D., F. R. S. (Edin.) Professor of Dermatology, University of Kansas School of Medicine, and Richard L. Sutton, Jr., A. M., M. D., L. R. C. P. (Edin.) Instructor in Dermatology, University of Kansas School of Medicine. Third Edition. St. Louis. The C. V. Mosby Company. 1937. 666 pages. Thirty-two mo.

Ted—"Now, you old bum, you're married. How do you like it?"

Sam—"Well, it has its faults, but it's better than working."

THE NEBRASKA STATE MEDICAL JOURNAL

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IMMUNOLOGICAL ASPECTS OF SYPHILIS*

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Kansas City, Kansas.

My subject this morning is the general aspects of syphilis.

Those principles which underlie the basic diagnosis and treatment of syphilis will be taken up, not in any specific manner, but the general aspects will be discussed. In order to understand the nature of syphilis, one must have some knowledge of its basic pathology. Syphilis is one disease in which the knowledge of its pathology aids us immeasurably in its proper treatment. The pathological phases that I am going to discuss are simple but I think they represent the facts as we know them today. There are four phases; the first being the phase of invasion. It represents the time in which the organism of syphilis first gains entrance to the human body, before the defense cells of the body begin to set up a reaction against it. It is during this time interval that it forms the chancre and from there invades the different tissues of the body.

One must bear in mind that this organism of syphilis in its state of invasion can live on perfect terms of peace with its host for weeks with but little cellular reaction taking place. This stage of invasion, whether in the primary lesion or in the tissues, especially if the serological reaction is negative, is the most easily combated by treatment.

The next stage, that of infiltration, makes its appearance when the defense mechanism of the body takes notice that the spirocheta pallida has gained entrance into the different tissues. It begins to throw out a barrier against this organism in order to destroy it, using as its chief means of attack, the lymphocytes, plasma-cells and macrophages. These cells drift to those places where the spirochetae are most active, especially around and in the blood vessels.

The phase of resolution is the third stage in the pathology of syphilis, and is one in which the organisms of syphilis are beginning to be overcome by cellular elements, so that they begin to disappear or drift away.

The fourth or final stage of syphilitic pathology is the formation of scar tissue. Such pathological processes of syphilis one wishes to prevent or to mature. We must not think that in the pathology of syphilis we have all four of these stages occurring in regular and consecutive intervals. One must regard these stages as ones that are progressing in different parts of the body at the same or different times. Take for an example, the progressive pathological processes of syphilis that are taking place in syphilitic aortitis. We know that aortic disease, like paresis and locomotor ataxia, occurs years after the syphilis has made its first appearance. There will be a colony of spirochetae without cellular infiltration or scar tissue formation and another area with cellular infiltration or scar tissue formation. Over a period of years these different conditions progress, finally resulting in the symptoms of syphilitic aortitis. When the symptoms of syphilitic aortitis make their appearance, one is not dealing with early syphilitic aortitis but late syphilitic aortitis. It is a difficult thing to treat these late cases. Such processes, to my mind, can take place in the body in all of the different organs. It is the formation of connective tissue that we wish to prevent in the treatment of syphilis. If it has already formed as a reparative process, one wishes to make it firmer.

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*Read before the Annual Assembly of The Nebraska State Medical Association in Lincoln, April 26, 1938.

The immunity of the body against syphilis is a most salient feature to be considered. We all know that in every disease of bacterial or parasitic origin there must be some natural immunity, which enables us to combat successfully the attacks of that disease. Fortunately, nature has constructed the body so that it is possible to raise certain defense mechanisms, and syphilis is no exception to this rule. In the past history of most of us, we would probably find some occurrence of syphilis in our ancestors. We believe that due to the presence of this disease in our ancestors, that some racial immunity to it has been built up. Medical history tells us that when syphilis first made its appearance it was far more malignant than it is at the present time. The death rate was twenty per cent in the acute disease. The primary infection was often followed within a short time by syphilis of the bones and joints. Several authors mention the fact that syphilitic disease of the bones and joints made their appearance within three to six months after the primary lesion. Therefore, all of us at the present time have secured some immunity to syphilis because our ancestors have had the disease and have conferred upon us passive or potential immunity. This immunity that we have to syphilis, we think is intimately related to the reticulo-endothelial system. Of course, these statements are open to criticism, but until a better explanation is found for the basic principles of the defense mechanism of the body, we must proceed on that basis. Breutsch(1) and others state that "when malaria is injected into the human organism, the endothelial cells lining the capillaries of the sinusoids of the liver begin to swell or increase in size and are cast off as living independent cell units capable of an independent existence."

Macrophages, whose phagocytic action destroys a certain number of parasites, have the power of engulfing and destroying the malarial parasites under certain conditions and those conditions are brought about by the heat. We think also, that the plasma cells and the lymphocytes under certain conditions may produce specific enzymes or antibodies which may dissolve the organism of syphilis or that they may absorb certain lipoid substances as well as dead cells or their fragments. Whatever this defense mechanism is, it is capable of being stimulated by heat to such an extent that with heat alone, syphilitic manifestations will make their disappearance. It has often been stated, although the opinion is changing now, that heat in its role in the stimulation of the defense mechanism of the body, also produces thermal death in the organism of syphilis; that these organisms died because they could no longer bear the heat. If this statement be true, it will not bear close analysis, for the simple reason that if the statement were true, there must be two types of the organisms of syphilis; one of them producing late lesions and capable of being killed by heat, and a second group, those that produce primary and secondary lesions that are not killed by heat. The organisms of syphilis do not die a thermal death, apparently resisting a temperature that the human body cannot endure. Patients have been subjected to heat for long periods of time, four to five hours with a temperature of 105 to 106 degrees, with a disappearance of the syphilitic lesions, but with their prompt reappearance unless specific treatment was immediately instituted. Heat stimulates the action of the reticulo-endothelial system and raises its powers of resistance. It is this biological chemical process, produced by the inter-reaction of heat and the defense mechanism that is probably responsible for the death of the spirochetae.

After we have, to some extent, talked about some of the basic pathology of syphilis and the action of the defense mechanism of the body, we want to combine these two views and see how we may use them to advantage in the treament of syphilis. We have arrived at these conclusions:

The use of hyperpyrexia in any form, it makes no difference whether it be hot water, electrothermal cabinets, hot air conditioned machines, infra-red rays or other heat media, does two things: it raises the immunity of the individual to the disease and it enhances subsequent treatment.

Next we want to take up briefly the action of the different drugs upon syphilis, and combine all of this into the conception of the modern treatment of syphilis. When we take up the action of the different metals, we will take up arsenicals first. We do not believe that the organisms of syphilis die because of the direct union of the arsenicals with the organism itself. The important radicle of the arsphenamines is the arsenic oxide which combines with certain substances secreted from the body cells, producing a substance which is inimical to the welfare of the organism of syphilis. It has been advised that salvarsan be used in the treatment of syphilis instead of neasalvarsan. There is no question that salvarsan is more active therapeutically than neosalvarsan. However, it is more difficult to give and is attended with higher incidence of reactions. Neosalvarsan can be given by a very simple technique and with much less danger to the patient. In view of this fact, it hardly seems justifiable to use old salvarsan because of the slight difference in their therapeutic activity.

Mercury is probably one of the most efficient of the metals. It may be administered by giving soluble or insoluble salts intramuscularly. Mercury oxycyanide and bichloride are given in aqueous solutions. The intravenous administration of mercury may precipitate acute mercurial poisoning and is a very inefficient and dangerous method. The objection to the administration of mercury intravenously is its rapid excretion and uneven saturation. Mercury by mouth should be supplemented by mercury given otherwise. The injection of oily suspensions or aqueous solutions is followed by little or no pain. Cole(3) and his co-workers state that the efficiency of mercury depends upon the rate of kidney secretion which must be daily between 0.5 and one mg, after the fourth week of treatment. The best forms of mercury seem to be proto-iodide by mouth, mercury rubs using fifty per cent ointment, and mercury salicylate by intramuscular injection. All three of these preparations, properly given, meet the excretion requirements.

Bismuth is very effective in the treatment of syphilis, but it should always be given intramuscularly. The action of this metal depends upon its union with an enzyme known as Bismogene, forming a substance known as Bismoxyl. The latter substance produces the destructive action upon the organisms of syphilis. The action of this drug is measured by the rate of excretion in the urine. Twenty-five per cent of a single injected dose should be excreted in fifteen days, i.e., 4½ to 5 grains. The oil soluble and oil insoluble preparations seem to be the best. The salicylate for somatic syphilis and the salts of bismuth acid for central nervous system types are to be preferred. The rate of excretion of bismuth in the urine is not so well determined as in mercury.

The giving of iodine is almost a lost art in the treatment of syphilis. The action of iodine is not fully understood in the treament of that disease. One author(4) recently stated that the time has now come when iodine can be dispensed with entirely, because the arsenicals do all of the things that iodine does, and do them better. It is thought that iodine acts as a neutralizer for certain lipoid substances, especially lecithin, and other lipoid substances which block the action of the anti-trypsin. The latter is an enzyme which prevents the formation of connective tissue. An English authority states that the end result from the use of iodine was the prevention of the formation of scar tissue, no matter in what state syphilis might be.

The organism of syphilis is composed largely of lipoid substances and globulin. In its interreaction with lymphocytes and other cell deviations of the system of histocytes, large amounts of these substances are formed especially in the peri-vascular lymph spaces. Apparently these lipoid substances block the action of the enzyme antitrypsin (the natural neutralizer of scar tissue) and thus allows connective tissues to form. The iodides apparently neutralize the lipoid substances, thus allowing the natural enzyme to attack the connective tissue. Thus gammata are broken down and large masses of lymphocytes dispersed. Because of this state of affairs, iodides are recommended in early syphilis, for we know that scar tissue is formed even in the acute stage. It is possible that all of the metallic antisyphilitics may stimulate the defense mechanism of the body.

Syphilis is essentially a disease of the blood vessels and parenchymatous cells. Closing off of the blood vessels produces destructive lesions at the end of those blood vessels. In early syphilis there is the formation of fibrous tissue around the blood vessels associated with endarteritis.

We often divide syphilis, incorrectly, into early and late syphilis, or into primary, secondary and tertiary syphilis. Pathologists give three classifications, acute, chronic and mixed syphilis. The acute stage is the stage of invasion and infiltration. The chronic is represented in syphilitic processes with a maximum of scar tissue formation. Mixed syphilis is an old syphilis with new areas becoming active. When that complication occurs, it makes a difference as to which method of treatment is used. In the first stage, which usually occurs in young people, we use every efficient method at hand. In the chronic or mixed type, we must use more care in the selection of our method of therapy.

We come to the practical application of these principles. We know that the most favorable time to treat syphilis is in the so-called seronegative phase. The stage of pathology is the stage of invasion. If a man has a primary lesion, there is little enlargement of the lymph glands and a negative Wassermann. I agree with Stokes, O'Leary and others, that the intense treatment of the seronegative cases for over two years is usually successful in ninety per cent of the cases. But if these patients in the seronegative phase do not get proper treatment, they may develop a type of syphilis which is very difficult to control. I believe that this untoward result is due to the fact that the defense mechanism of the body has never had a chance to become stimulated by the organism of syphilis, and the defense is at so low an ebb that the organisms increase insidiously without any resistance upon the part of the body at all.

The second type consists of the so-called malignant cases in which active treatment is not followed by the disappearance of the syphilitic lesions. There are a good many cases in which the more modern treatment is given with arsenicals, bismuth and mercury, and yet, under this treatment, mucous patches form or other lesions occur, even though the treatment is intense. The reason for this state of affairs is due to the failure of action upon the part of the defense mechanism. We believe that if lesions heal under active treatment with arsenicals, bismuth and mercury, this is an index that the patient's immunity is at a high level. If that immunological index is not high, but low, one can give unlimited amounts of arsenicals or bismuth without any results whatsoever.

Malignant syphilis, on the other hand, we do not believe to be due to a particularly virile organism which attacks the individual with irresistible force. Malignant syphilis is due to the entrance of an organism into an individual whose defense mechanism is not functioning properly. We have been able to take malignant syphilis and cause the healing of every lesion by the use of hyperpyrexia. Malignant syphilis occurs in an individual who has a low immunity to that disease. We have also found that the positive Wassermann reaction is indication of the degree of immunity which the patient has to his disease. In a large number of individuals with active syphilitic lesions, accompanied by a negative Wassermann reaction, we were enabled to heal these lesions with hyperpyrexia alone. Of this number, twenty-five per cent developed positive serological reactions, while their lesions were healing. We believe that a person who has a positive Wassermann reaction has a high degree of immunity. We do not believe that the chemical and biological substances which make a positive Wassermann reaction possible are a part of the immunological cycle but are supplied by it.

From the foregoing statements we arrive at several conclusions. First, that the disease syphilis can be attacked from two different standpoints: (a) The use of anti-syphilitic remedies, with a view of dealing death to the spirachetae pallidae, such as the arsenicals, mercury and bismuth. (b) Raising the index of immunity of the indvidual to his disease. This brings to light a second act of deductions. (a) A high immunology index must always accompany intensive treatment with the anti-syphilitics. A positive serological reaction in the presence of active syphilis is an indication of high immunity. The immunological index of the patient can be raised by the proper application of heat. This results in the fact that subsequent treatment with the metallic anti-syphilitics is greatly enhanced thereby.

From various surveys it has been found that between six and eight per cent of the population of the United States has syphilis in varying stages of development. Heat has been found to be of the greatest use. This is done by immersing the patient in hot water. Most heat machines are very expensive and only a limited number of patients can take advantage of their use, either because of cost, time or opportunity. There must be ten million bath tubs in the United States, each of which is a potential heat unit, available for home use. We believe that the continued use of this form of therapy will do much to bring about the healing of even the severest lesions. The temperature of the water is 112 F., and the patient is kept in the bath for from one to two hours. We have been able to cause the disappearance of resistant lesions by stimulation by heat. The defense mechanism of the body is set off at a temperature of 104 degrees F. We had one very resistant case in which the patient was treated with hot baths for seven weeks with complete healing. Hyperpyrexia enhances subsequent treatment.

The general message that I wish to leave with you, is that if you keep in mind the pathology of this disease, and by it are guided in your therapeutic regime, you will be far more successful in your treatment of syphilis. If you will remember that the arsenicals, used in conjunction with bismuth and mercury, have their greatest therapeutic value during the stage of invasion and in the stage of infiltration of syphilitic pathology. In the stage of fibrous, on the other hand, the arsenicals have no place in the treatment of late syphilis. The immunity of the patient is just as responsible for healing of syphilitic lesions as the anti-syphilitic remedies. Immunity can be raised by the use of hyperpyrexia. You can treat these patients in their own homes with hot baths. We should change our course in the treatment of syphilis. We should give the so-called intensive course. We should, later on, introduce a course of hyperpyrexia to raise the immunity of the patient and enhance subsequent treatment. This procedure should be followed by another course of anti-syphilitic heavy metals.

It is my belief that by this method the three great causes of death can be largely eliminated. I refer to cardio vascular disease, paresis and tabes dorsalis.

A summary of cases treated by hyperpyrexia in which the heavy metals, arsenic, bismuth and mercury, failed to stop the progress of the disease:

1. Sero negative cases insufficiently treated in the primary stage, with appearance of secondary lesions of various types, many of the patients still retaining their negative serology. In all of these cases the lesions disappeared with heat alone. Twenty-five per cent of the sero negative cases became sero positive under this treatment; subsequent treatment with the heavy metals was renewed, with entire success.

2. So-called cases of malignant syphilis responded to hyperpyrexia alone.

3. Sero-positive cases that developed malignant phases under intensive treatment with arsenic, bismuth and mercury, responded to heat in a rapid and gratifying manner. This result was probably due. not only to the increased immunity of the patient, but to another factor which is not often taken into consideration. For some reason, the arsenic, mercury and bismuth used in these cases was not available, but was stored in certain depots of the body, probably the reticulo-endothelial system, where it was only potentially available. The heat utilization might have made these metals available through a finer molecular disposition, or robbing the spirochetae of a protective covering of some kind, or forming a lytic substance or enhancing the activity of the metals through various sources.

In all of these cases, in which heat was successfully employed, whether it was mechanical, biological or electrical, the lesions invariably recurred, but these recurrences were promptly dispersed by the same metals that were a failure before the heat was used.

4. Tertiary skin lesions promptly responded to heat.

5. Syphilis of the liver, especially the congenital type, responded to heat alone, but that response was held only by the subsequent use of bismuth, mercury, and the iodides.

6. In all fifty cases of interstitial keratitis were treated with malaria and heat, and responded in the most gratifying manner in eighty per cent of the cases. Subsequent treatment was necessary to hold the gained territory. Syphilitic bones responded in the same manner.

7. Optic atrophy (fourth stage of pathology) remained the same and grew worse. Charcots joints, in which there was an attempt upon the part of the natural forces to repair the part, responded to heat thoroughly, and then continued to improve under anti-syphilitic therapy (two cases). The atrophic type failed to respond.

As you will recall, all of these assertions were backed up by photographic studies. These photographs and summary were shown to demonstrate the fact that the human organism is enabled to overcome certain phases of disease if only the defense mechanism is given a chance.

One must always take into consideration the reaction of the spirochetae pallidae against human tissues, for that eventually one uses the well known anti-syphilitics: arsenic, mercury and bismuth.

One must of necessity consider the reaction of human tissue against the spirochetae pallida. The reaction is due to the defense mechanism of the body and occupies just as an important position.

It should be stimulated by heat, no matter whether it be malaria, mechanical, electrical or chemical. Futhermore, the action of the iodides should be placed in the second group.

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SOME TIMES TRUE

A lawyer got into an argument with a physician over the relative merits of their respective professions.

"I don't say that all lawyers are crooks," said the doctor, "but you'll have to admit that your profession doesn't make angels of men."

"No," retorted the attorney, "you doctors certanly have the best of us there."

NEBRASKA'S PROGRAM OF VENEREAL DISEASE CONTROL*

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Fulltime personnel since early in 1937 has permitted considerable enlargement of its work, but the Division of Venereal Diseases has continued in the conservative policy wisely initiated and prudently maintained during some years. It has been our theory that much more could be accomplished in the control and ultimate eradication of venereal disease by a sustained consistent program than by an intensive campaign that might soon tire the public and drop of its own weight. In the heat of the national campaign for the eradication of syphilis, we have not overlooked gonorrhea as an important etiological factor in widespread invalidism, chronic disability in both men and women, and in the tragic breaking up of homes. Our program has consistently adhered to the whole problem included in the functions of a Division of Venereal Diseases.

An analysis of the objectives and the agenda of various health departments and social agencies, many of whom are interested primarily in lues, shows that, divested of all superfluous verbiage, the program of control can be expressed thus:

1. Find venereal disease.
2. Treat venereal disease early and adequately.
3. Discover, examine, and treat sources and contacts.
4. Eliminate prenatal syphilis by the examination and treatment, where indicated, of expectant mothers and those about to be married.
5. Teach the facts about venereal disease to all.

In every part of such a program, the family physician plays an important part and the Department realizes its dependence upon the profession and the absolute necessity for harmonious cooperation in all its endeavors. To this end, we feel that this body is entitled to a comprehensive report of the work done and the frankest possible exposition of our plans for the future. Your suggestions and criticism will in turn be given the most careful consideration.

FINDING VENEREAL DISEASE

Finding venereal diseases, which rank with the most prevalent serious infections, would not appear to be difficult but the promiscuous individual with an early infection who neglects treatment and persists in spreading the disease is often the most elusive and important. Though finding such an individual might at first thought appear to be purely a function of the Health Department, the physician in this search is an indispensable aid. Such cases are seldom discovered except as sources and they are most frequently found by a careful history obtained from the contact who seeks treatment. A painstaking history with a determined effort to uncover the source of the disease is often the only method by which such a public menace may be brought to light. Such a history is part of the physician's obligation to his community and to humanity.

Local boards of health too should be aware of the powers granted them under the rules and regulations of the Department to examine suspected persons and isolate and treat by compulsion if necessary.

This Department has not encouraged, nor does it condone, efforts to obtain widespread and indiscriminate Wassermann tests. Such procedure is not always in the interest of public health. It may succeed only in discovering a certain number of latent or late cases which are not infectious and miss earlier cases which are a threat to the community health. It often creates situations which work an injustice to the unfortunate victim without accomplishing any commensurate good. We advocate that Wassermann tests be made part of the physical examination in chronic diseases and always in the case of a pregnant woman, and insist that a careful history and a complete physical examination are far more valuable than any serological or laboratory test alone.

The careful search for sources and also contacts, especially in the family of the victim and the reporting of delinquents as required by law, enable this Department to run down many otherwise hidden sources of infection.

Education of the public too plays its part in finding venereal disease and we feel that the publicity given such diseases, not alone by our own popular talks but by the press, radio, etc., have been largely responsible for the fact that the reported cases of syphilis in 1937 have increased 155 per cent, while reported new cases of gonorrhea have increased 32.7 per cent. While we are well aware that there are still only about ten per cent of the actual cases reported, we are confident that many more cases of venereal disease are now being treated by legitimate practitioners.

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*Read before the Annual Assembly of The Nebraska State Medical Association in Lincoln, April 26, 1938.

TREATING VENEREAL DISEASE EARLY AND ADEQUATELY

Since treatment and prevention in no instance so nearly approximate one another as in venereal disease, this may be said to be the most important point in our whole program of control, and in this phase almost our whole reliance must be placed on the physician.

The treatment of gonorrhea is unfortunately not yet sufficiently standardized to permit of any hard and fast rules of conduct. In the early cases of syphilis, however, the treatment is so well established that Dr. Stokes says, "The average doctor could do the treating of ninety per cent of the cases of early syphilis effectively." Because the patient is apt to confuse the ethical specialist with the quack, because his proximity makes treatment by the family physician cheaper and more convenient, and because the physician-patient relationship is so essential to adequate treatment, all doctors of medicine should be encouraged to prepare themselves to undertake such treatment.

The Department has sent to all physicians in the state a copy of the "Manual of Treatment" prepared by the cooperative clinics and the United States Public Health Service. A representative of the Division has addressed thirty-four medical meetings throughout the state and has thus contacted some 700 physicians in addition to many personal interviews held as opportunity presented. If it can be arranged through the cooperation of the Venereal Disease Committee of this Association, it is hoped before long to conduct a series of refresher courses in the diagnosis and treatment of venereal disease in suitably located towns throughout the state.

Medication, as most of you are aware, is being furnished liberally, not alone for the indigent, but for those who would otherwise be unable to provide for treatment. During the past six months 4,690 ampules of Neoarsphenamine, 295 bottles of Bismuth, and 75 packages of Mercury were thus distributed.

No funds are yet available at present for subsidizing physicians who give their services to such patients, but in some counties various governmental agencies, as a result of our educational program, are making some provision for the remuneration of physcians. From recent indications the congress will make funds available for qualified physicians to receive more remuneration for their services in connection with cases under treatment at public expense than has been the case heretofore. After all, it is a shortsighted policy to neglect treatment of an infectious ambulant patient when he could easily be made noninfectious and continue his work safely than later be compelled to treat in an institution at greatly increased cost, not only the patient but many new cases among his contacts.

Diagnosis, especially early diagnosis, has been facilitated by the installation of darkfield apparatus in a number of hospitals and private laboratories throughout the state. The public health laboratory of this department continue their splendid service both as to gonorrheal smears and serological tests. All bloods are checked by two tests, a Wassermann and one of the precipitation tests. The laboratory cooperating with the cooperative clinics and the United States Public Health Service enjoys a high rating as to its efficiency. A thirty per cent increase in the number of Wassermann tests and a smaller increase in the examinations for gonorrhea has been shown in the past year.

It would seem from the number of checks made on the same patient that too much reliance is still placed by some on the Wassermann as an index of cure. Regardless of serology, treatment should be continued to at least a minimum of twenty doses of an arsenical and forty of bismuth or mercury, even in the absence of symptoms. No patient should be discharged from treatment until a spinal fluid examination has been made. Even in the absence of a positive Wassermann on blood or spinal fluid, any aberration of globulin content, cell count, or colloidal gold should have consideration in determining the patient's future care. These tests are available in the state laboratory.

According to the report based on a survey of Omaha and ten counties of the state, only a little more than ¼ of the patients treated by private physicians and a little more than half of those treated in hospitals and only about 15 per cent of those treated in public clinics received even the minimum treatment for early syphilis. I speak only of early syphilis because of its significance from the standpoint of public health. Every case of neurosyphilis and every case of paresis was once an early case and adequate treatment could have prevented the late crippling manifestations of the disease. The figures from Nebraska are slightly better in this respect than those shown by a recent survey of the situation in Chicago. In this phase of treatment, the Health Department can be of great aid if the physician will cooperate.

Few of the patients with inadequate treatment have been discharged. Most of them doubtless have simply neglected to return for treatment and, as delinquents, were subject to report by name and address to the Department of Health. When such reports are made the Division, through specially trained, competent, and tactful medical case workers, will endeavor in every case to restore the patient to treatment. The reporting physician is in no way involved. If possible the patient is returned to him, in any case to a reputable physician.

A pathetic case, recently brought to our attention by an ex-president of this Society, illustrates our point. A young executive with every promise had worked his way up in a corporation, was the local manager of his company, and had just received notice of a promotion to the national office. This meant economic security for himself and family. Just at this time he suffered an attack giving every indication of early paresis, and the prospects are that he may spend his remaining days in a public asylum and his family be thrown upon the charity of relatives. Ten years before, this man had had a few treatments for a primary lesion but as the early symptoms vanished, the patient became negligent and finally dropped out of sight and out of mind. What a tragedy! Worse because it could have been avoided. A notification to the Department, one or more friendly interviews, and such a patient could be continued on treatment and his future secured.

DISCOVERY, EXAMINATION, AND TREATMENT OF SOURCES AND CONTACTS

So much has already been said regarding the discovery, examination, and treatment of sources and contacts that it need only be reiterated that, without the aid of the physician in ascertaining the location of such sources of infection, the Department is sorely handicapped. Epidemiology, or source tracing, is of the most far-reaching value in the control of these diseases and should occupy the greater part of our time, but carelessness in reporting, apathetic interest in the patient's history on the part of the physician, and lack of information on our part curtails our efforts and success.

During the year, the Division has been successful in bringing 35 patients to treatment for the first time, 95 delinquents were restored to treatment, and 18 who had left the state were referred to other health departments. Two health warrants were issued. As the movement for control of venereal disease progresses, it is certain to be increasingly aggressive in locating sources and getting them under treatment.

EXAMINATION AND TREATMENT OF EXPECTANT MOTHERS AND THOSE ABOUT TO BE MARRIED

The public more than ever before is conscious of the importance of venereal disease and learning the facts in regard to them. Given this knowledge they will expect, if not demand, a Wassermann test as part of the examination made of the mother in early pregnancy. The alert physician will be forehanded enough to include serologic with other routine tests and will also encourage complete physical examinations of those contemplating marriage.

It may be argued that such procedure only increases our work and expense and brings no added compensation. Such an attitude is the surest way to precipitate some form of state medicine. The public demands such service, have a right to it, and should pay for it. They should receive it from the doctor but if they don't, some agency public or private will eventually provide it and we may be doing the work under someone else's direction.

TEACHING THE FACTS ABOUT VENEREAL DISEASE

In planning our program, it was hoped that most of our time would be devoted to epidemiology and a smaller share of it to educational work. The demand for authoritative information by the public has been so great as to absorb a major part of our time. During the year, 178 addresses have been made reaching an aggregate of 20,000 lay auditors. These talks are made on invitation only and the increased demand is evidenced by the fact that, while only 39 of them were made during the first half of the year, during the past 6 months invitations to lecture have tripled in number and 8 times as many people were reached. 86 showings of suitable moving picture films were made during this period. The groups contacted included 39 high schools and 10 colleges, in addition to numerous women's clubs, civic clubs, P. T. A.'s, nursing organizations, fraternal societies such as the DeMolay, a C. C. Camp, a ministerial convention, a group of assistance directors, etc, etc.

An effort is made to avoid frightening people and creating "syphilophobia." The plain facts are stated with a hopeful message as to the possibility of cure if adequate treatment is carried out. Local physicians, civic leaders, educators, and clergy usually cooperate actively in the program, and while there is occasional opposition in advance, we have had no unfavorable criticism following a meeting.

The present campaign on the part of the Speakers Bureau of our own State Society has proven a welcome aid in the educational feature of our work. It may prove educational to the physician as well as to auditors, inasmuch as it makes him more venereal disease conscious. Physicians as well as the laity need to be aroused. Too frequently in asking physicians about the venereal disease situation in their locality, we get such an answer as, "We don't have any of it here and I am d--n glad of it, for I don't treat the d--n stuff anyway." If we are not looking for venereal disease, especially syphilis, we probably won't find it and if we won't treat it, who is to blame if the patient attempts self-treatment or falls into the hands of the illegal practitioner? We are occasionally depressed in reviewing our work by the feeling, that you may share, that our program is extremely slow. While that may be true we trust that we are building securely. Careful epidemiological study of even a few cases, a well-thought-out lecture on sex hygiene to even a small group of high school students, a studied word of advice to an unfortunate may do more to save lives and prevent suffering than a great volume of misdirected effort.

In closing, permit me at the risk of tiresomeness to repeat—your help is needed. Without the aid of the medical profession—every member of it—any health project is doomed to failure. With continued cooperation, such as we have enjoyed in the past and for which we are duly grateful, we may hope ultimately to achieve some degree of success in the control of venereal disease.

TREATMENT OF ACUTE AND SUBACUTE GONORRHEA*

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The stimulus provided to our profession by the United States Department of Public Health to intensify our war on the venereal diseases is welcomed by all of us. The widespread publicity among the laity by the newspapers, by radio, and by the efficient speaker's bureaus of the various state departments of public health is indeed a great help to educate the public to the appalling fact that, outside of the common cold, venereal diseases rank next in the list of the diseases contracted by human beings. This last statement might make you think that I am a bit mixed up in my medical statistics. Let me refer you to that valuable little bulletin entitled "Venereal Disease Information"(1) which is published monthly by the United States Treasury Department. This bulletin is under the direction of Dr. Thomas Parran, Surgeon General of the United States Department of Public Health. Imprinted on the back cover of the April, 1937, issue one may see a graphic report which displays the number of new cases of syphilis and gonorrhea in the United States in 1935 as compared with other communicable diseases. There were 1,037,000 new cases of gonorrhea, 518,000 new cases of syphilis, 340,000 new cases of tuberculosis, 260,962 cases of scarlet fever, 39,226 cases of diphtheria, 18,355 cases of typhoid fever, 10,839 new cases of poliomyelitis and 7,957 cases of small pox. In other words, there was one hundred per cent more gonorrhea reported than syphilis, and almost three hundred per cent more than tuberculosis. The number of cases of gonorrhea exceeds the number of cases of that common disease, scarlet fever, by almost four hundred per cent. If you will study this graph carefully you will notice that of the 1,037,000 new cases of gonorrhea reported only 175,000 cases were voluntarily reported. The other 862,000 were reports based on a one-day survey of all medical sources in the United States Department of Public Health. We all know that there are many individuals who never see a physician for this disease. There are many physicians who never report their patients whom they are treating for this disease to their state department of public health. There are many persons who have gonorrhea who do not know that they have the disease. They are so little troubled that they do not seek medical advice. There are those who have been made to believe that they are cured with different medicines sold by the unethical druggist. The last three cases of prostatic abscess which I have encountered were treated in the last-mentioned fashion.

Add these last unfortunate cases to the 1,037,000 and it will show you the tremendous task we have to bring this most devastating disease under control.

I consider myself particularly fortunate in being permitted to air my views concerning gonorrhea. When I note the emphasis placed on educating the public to the dangers of syphilis and a tendency to go a little light on the subject of gonorrhea, I welcome the opportunity to steal some of the thunder away from those who are concerned with syphilis alone.

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*Read before the Annual Assembly of The Nebraska State Medical Association in Lincoln, April 26, 1938.

Gonorrhea has been probably the most poorly treated of diseases. I ascribe this to two definite causes. One cause has been the lack of emphasis placed by the medical teacher to the students in the medical schools; the other has been the lack of a specific drug to combat the gonococcus, combined with a meager knowledge of the pathology concerned and the anatomy of the situation by the person treating the disease.

The time which has been allotted to me to speak on a gonorrheal subject is too short to go into the treatment of all of its phases. Therefore, I have chosen the treatment of the acute stages of gonorrhea which I feel is by far the most common stage seen by the physician.

With the advent of sulfanilamide the medical profession was at first made to believe that at last we have a specific with which to treat gonorrhea. Report after report has come in with conflicting statements as to results. Some physicians are getting complete cures in practically all of their patients by prescribing large doses of sulfanilamide with no local treatments. Others have received but fair results on sulfanilamide alone, and, therefore, are giving either urethral irrigations or injections as supplements. Many report "dreary" results with sulfanilamide and urethral medication combined.

It is my purpose to outline to you the form of treatment carried out at the urological out-patient department of the Creighton University School of Medicine. Here we are dealing with charity patients whose environment is not particularly conducive to the early healing of any disease. However, because the cures brought about within an average of five weeks give the very satisfactory result of seventy-five per cent in those who can tolerate the drug; because we have had almost no complications of gonorrhea, in fact so few that we have had much difficulty finding complications of gonorrhea to show to our students; and because I have no desire to be sensational, nor do I feel that I am presenting anything particularly original, I feel that this following outline is an excellent method for you to try. It has not the dangers of many methods being tried at the present time. First of all let us consider the acute anterior gonorrheal urethritis patient who has been but recently exposed and who displays a purulent urethral discharge with the only subjective symptom heard so often, namely, "tingling on urination." This patient's first four ounces of urine voided are cloudy, the remainder is clear.

May I say in passing that the two glass test does not definitely prove the anatomical position of the infection in the male genito-urinary tract. If the first glass is cloudy and the second glass is clear and the patient has never had symptoms of burning on urination, frequency, nocturia nor pain, we can say that the infection is either an anterior urethritis or an anterior with a posterior urethritis of sufficient mildness as to cause the formation of very little pus in the posterior urethra. If much pus was formed in the posterior urethra it would seep through the weak bladder sphincter to become mixed with the urine in the bladder thus making a cloudy first and second glass.

We instruct this patient to abstain from all alcoholic and carbonated beverages, all sexual excitement and spicey foods. We prescribe sulfanilamide grains X four times a day and one-half teaspoonful of baking soda in one-half a glass of water three times a day. We give daily urethral injections of five per cent neosilvol for one week When we feel that the patient is capable of giving his own urethral injections, we then order a four ounce bottle of the five per cent neosilvol and a one-fourth ounce bulb type syringe. We direct him to use this syringe, one-third full of the neosilvol solution as a urethral injection just before retiring. We find that in almost all of our patients the discharge is absent within a week. After two weeks on sulfanilamide grains X four times a day, we reduce the dosage to grains V four times a day for the duration of treatment. We meanwhile, watch the first glass of urine for pus and shreds. When these have been absent from the urine for at least two weeks we pass a sound into the anterior urethra. If this does not occasion any discharge, for which we have given the patient a glass slide on which to make a smear, we again pass a sound into the anterior urethra and gently massage the urethral tissues on the sound. If no discharge results we instruct the patient to continue with the last-mentioned dosage of sulfanilamide, the sodium bicarbonate and the urethral injections until he has been on treatment for at least four weeks. If at the end of this time all seems normal, we examine the prostate for evidence of infection. If there is pus present we institute treatment of the prostate by giving prostatic massages, never more than two a week. This depends, of course, upon the degree of prostatic infection.

Should we see the patient later in the acute infection, that is, when he comes in either after he has tried to treat himself for a while or after he has had poor treatment elsewhere, or in other words when he has an antero-posterior urethritis, our method of treatment is slightly changed. We advise hot sitz baths three times a day if possible. We give the same dosage of sulfanilamide but we do not start the urethral injections until all symptoms of burning on urination, frequency of urination and nocturia, chordee, and pain in the perineum have disappeared. The second glass of urine must also be clear before we start the urethral injections. It takes an average of seven days before we can begin anterior urethral injections. When these are begun, treatment is followed just as in the acute anterior urethritis group.

Usually that group which does not respond to the sulfanilamide therapy and urethral injections contains some who fail to follow instructions as to the behavior so necessary to prompt cure. Those who use alcohol or are sexually excited fail to respond well to any therapy. There are also those who have chronic prostatitis which has existed for some time before their present gonococcal infection. In practically all of these patients I notice that the cure of an acute gonorrhea is more difficult. Then of course there are those who cannot tolerate the drug and whose occupations are such that it would be dangerous to continue the drug after the appearance of such reactions.

Remember that the prostate is always infected in antero-posterior gonorrheal infections. Never forget to massage a prostate before releasing a gonorrheal patient from your care. If you get no secretion at the time of the first massage ask the patient to return in three or four days for another massage of his prostate. The fac that you were unable to obtain any secretion should make you doubly suspicious that you are dealing with a pro statitis. You can't get secretion because the ducts are occluded by debris and inflammation. The next massage may show merely debris with a few pus cells composing a scanty secretion. Then at the next massage a few days later a profuse purulent secretion will appear.

It is hardly necessary for me to say that the physician cannot determine whether a prostatic secretion is normal or abnormal by looking at it with the naked eye. It must be examined microscopically. No urologist can tell a pathological specimen of prostatic secretion from the normal without the aid of the microscope. Yet too often have I heard the patient say that his physician held to the light prostatic secretion on a slide and declared it normal. I have checked myself this way many times. Secretions which I thought appeared perfectly normal were found to be loaded with pus cells on microscopic examination. Secretions which I thought were purulent because of their milky appearance proved on microscopic examination to contain many amyloid and lecithin bodies, active spermatazoa and no pus.

Never massage the tender, swollen, throbbing prostate or you will convert a prostatitis into a prostatic abscess. I must confess that since using sulfanilamide I have not encountered one of this type.

Since using sulfanilamide I have seen no cases of periurethral abscess, abscess of Tyson's glands, epididymitis, gonorrheal arthritis or gonorrheal septicemia.

It has been of interest to note the reactions to lower doses of sulfanilamide. I have seen every reaction that has been reported with the larger doses in my patients except cyanosis, agranulocytosis and anemia. My patients have complained of headaches, some dizziness, profound lassitude, slight nausea, mild diarrhea, skin rashes, weakness. I have disregarded the symptoms of headache, mild dizziness, mild lassitude, slight nausea and weakness. In those with skin rashes, diarrhea and profound lassitude the drug has been stopped until the reaction has disappeared. With many I have given the drug again with better tolerance on the patient's part.

If we could confine all gonorrheal patients to bed we could give much larger doses of sulfanilamide with fewer reactions. However the economic status of many patients is such that absence from work will jeopardize their jobs or there will be a dock in wages should they be away from work for two weeks.

The fact that patients on lower doses of sulfanilamide get many reactions, it is most hazardous to give the huge doses to ambulatory patients because of dizziness in those who may be driving automobiles or working around dangerous machinery. One should also avoid giving huge doses to those who are working in sunlight because of photosensitivity of the skin of those taking the drug. The patients who have developed skin rashes on low doses showed lesions mainly on the exposed surfaces of the body, namely the dorsum of the hands, the hands and forearms, and the face and neck. The type of lesion usually is morbilliform but I have seen typical urticarial, vesicular and scarlatiniform lesions. The best treatment for these rashes is stopping the drug and forcing fluids.

The results of treating gonorrhea with the Corbus-Ferry Filtrate has been of little value in my patients. Both Angle(2) and Pelouze(3) are of much the same opinion. In fact I have seen severe reactions from intradermal injections of the filtrate with a dose as low as 0.05 cc. One patient developed an acute edema of the eyelids. The penis became four times normal size within twenty-four hours after injection.

I have had little experience with gonococcal vaccines. I am young enough to profit by the experiences of others who have used this form of medication. It is claimed by Pelouze(4) that because the immunity balance in gonorrhea is so delicate "The administration of large quantities of vaccine usually has an opposite effect from that desired." Gonococcal vaccine is of value in small doses in many patients who after some time on treatment continue in a stationary stage. The initial dose of the stock gonococcal vaccine* is 0.15 cc. Two days later 0.25 cc. is given. In four more days 0.3 cc. is injected. Never use more than four doses and the best results are obtained when we never exceed 0.3 cc. If the vaccine is given in this dosage to patients at the first sign of joint pain or definite arthritis one will obtain excellent results. In a great majority of patients who fail to respond to treatment beyond a certain point a sufficient immunity response will develop if this therapy is used.

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*Containing 1,000,000,000 dead gonococci per cubic centimeter.

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EARLY SYPHILIS AND ITS CUTANEOUS MANIFESTATIONS*

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In support of the present public educational campaign for the eradication of venereal diseases, it would seem particularly timely that we, as physicians, should review some of the more pertinent points regarding the early recognition and management of syphilis.

It is quite apparent to those of us who are constantly in contact with fairly large numbers of syphilitic patients, that many cases of syphilis are diagnosed much later in their course than is most advantageous to the patients. The United States Public Health Service surveys support this observation in their statement that "only one-half of the cases of syphilis seek treatment within the first year of the disease and, of these, only 6% start treatment in the sero-negative primary stage."

If we are to accomplish the eradication of syphilis, most certainly we must reverse these precentages which exist as a monument to the conspiracy of silence, so recently broken, and which further stand out as a challenge to physicians, public health officials, and all public spirited citizens.

I believe it is true that, if the present public educational program is continued over a period of years, one of its effects will be that patients will tend to present themselves to physicians earlier and earlier for diagnosis. Should this be true, it is worthy of emphasis that we, as physicians, should take advantage of the available means to establish the diagnosis of syphilis as early and as accurately as possible.

It is my further belief that the problem of stamping out syphilis rests squarely upon the shoulders of the medical profession and can only be accomplished by strict adherence to, and practice of, modern methods of diagnosis and treatment by every doctor who assumes responsibility for the care of one of these patients. We have the knowledge and the tools to accomplish the task, if we will use them.

It will be the purpose of this paper to emphasize certain axiomatic principles incident to the early diagnosis of syphilis, both by laboratory procedure and clinical interpretation.

In pre-darkfield, pre-Wassermann days, when it was considered poor practice to diagnose early syphilis before generalized skin and mucous membrane lesions appeared, much consideration was given to the clinical interpretation of the initial lesion or chancre; in the light of our improved knowledge it is axiomatic that we consider every genital lesion syphilis until proven otherwise. By so doing we err on the side of safety and, if syphilis is present, painstaking darkfield examination will disclose it at a time when therapy is most effective.

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Many initial lesions of syphilis have little semblance to the saucer-shaped indurated ulcer of our textbooks. Some may be associated with or develop upon a chancroidal ulcer, a herpes progenitalis, or a lesion of scabies. Diagnosis and proper treatment at this time is our most effective means of preventing neuro-syphilis, aneurysm or other serious late manifestations.

In general, one can say that the absolute diagnosis of early syphilis is essentially a laboratory confirmation of clinical suspicion and that this laboratory confirmation should come through either the darkfield examination or serological tests such as the Wassermann, Kahn or Kline.

We must not be influenced too much by the statement of the patient regarding promiscuous relations, intervals since contact, et cetera, as such are apt to be extremely misleading. An interesting example of this is the statement of a farm boy from Iowa, whose penile lesion was said to have been caused by frostbite, acquired while driving in the cattle. He positively denied sexual contact but a darkfield examination disclosed typical spirochaetes.

The incubation period of the chancre, or time between the entrance of the spirochaete and the appearance of the chancre, varies between 10 and 40 days, with an average of 26. The diagnostic measure 'par excellence' to which we must turn as soon as possible after the appearance of a suspected chancre, is the darkfield microscopic examination. If a diagnosis can be made in this sero-negative primary stage, we will have accomplished what is, as Pusey has stated, "a golden opportunity for a cure."

The darkfield examination should be made by one who has proper equipment and who has had special training and experience in the technique of the examination and in the identification of the spirochaeta pallida under the microscope. This test is much more satisfactory when done on the patient himself by the darkfield microscopist than when made from a capillary tube of the suspected chancre exudate sent to the examiner. Capillary tubes are a source of danger in case of breakage and, after some minutes or a few hours, the spirochaetes lose their characteristic type of motility which is very helpful in the recognition of the spirochaeta pallida. Stained, dried, or fixed smears on slides are not satisfactory and should not be relied upon for diagnosis, as here again one is unable to visualize motility and even the contour of the organism is changed in a dried preparation. I believe that it would be well for some pathologists and laboratory workers to consider more seriously the responsibility they take unto themselves when they attempt to render a diagnosis of syphilis on such preparations as an india ink darkfield or other stained slide preparation.

If a chancre has been treated locally with antiseptics, or if a patient has received any antisyphilitic treatment, such as neoarsphenamine, the darkfield examination will almost certainly be negative. Therefore, neither the patient nor the lesion should be treated until a diagnosis of syphilis is either established or ruled out. If antiseptics have been used, normal saline wet dressings should be continuously applied and the darkfield repeated time and again until definitely sure of the correct diagnosis.

Should the darkfield examination of material from the suspected lesion be negative, possible immediate diagnosis may be made by a darkfield examination of material obtained from an enlarged regional lymph gland. This is accomplished by the injection into the gland of a few drops of normal saline solution, moderate maceration with the needle point, and the aspiration of a small amount of fluid.

Darkfield examinations of material taken from the mouth, throat, vulva, or vagina require special care, cleansing and isolation of lesions; also experience and judgment on the part of the microscopist in differentiating non-pathogenic spirochaetes from the spirochaeta pallida.

In our observation, a rather frequently overlooked diagnosis has occurred in cases presenting what appears to be a non-specific urethritis, when actually the seropurulent discharge is caused by an intra-urethral chancre. In some of these cases, induration of the urethra may be palpated—usually near the meatus—and here again the darkfield lends valuable aid. Even more difficult is the diagnosis of intra-urethral chancre in the presence of a specific urethritis—nevertheless the two conditions are occasionally associated—perhaps more than occasionally, if we are to give some credence to the patient's history in which he admits having had gonorrhea but denies having had a genital sore, although he has both clinical and serological exidence of syphilis. In a series of 231 cases with obvious secondary symptoms, reported by Stokes(2), 24%, including both men and women, gave no evidence in history or examination of ever having had a chancre.

In sharp contrast with early teaching, that excision of a chancre might remove syphilitic infection, we now know that, before the appearance of a chancre, spirochaetes are widely disseminated throughout the body—even to the central nervous system. Dissemination begins to take place from the time of inoculation and not from the time of the appearance of the chancre.

It is a serious error to rely upon the Wassermann or other serologic tests during the early chancre period. They are invariably negative during the first two weeks following the appearance of the chancre and may be negative much longer.

After a variable length of time from the appearance of the primary sore, an explosion of lesions occurs upon the surface of and within the body, which has been called the secondary phase of the disease. This variable length of time is called the secondary incubation period and is the time from the appearance of the chancre to the period of the secondaries and averages 45 days.

The commonest secondary eruption on the skin is the macular syphilide, or roseola, which occurs in 54% of cases. It is a generalized non-pruritic eruption, the lesions tending to be discrete but not absolutely so, frequently has a submerged or hidden appearance and, in a cool room, poor daylight, or artificial light, may be imperceptible. A hot bath will usually bring it into easy visibility.

A fresh macular eruption is of a pinkish color, becoming darker as it grows older. When sparse, it is best seen on the lower scapular areas or on the lower lateral surfaces of the abdomen. It may disappear in a few days or the majority of the lesions may disappear and others become infiltrated, darker in color and gradually develop into papules, either large or small. In some phases there is little or no distinction between macular and papular types, in which cases a better classification is maculo-papular. The maculo-papular syphilide occurs in only about 28% of cases. This type of eruption may fade and recur periodically either as a result of a small amount of treatment or without treatment. After these recurrences have held sway for a few months, such pathognomonic phenomena as the papulo-squamous palmar and plantar syphilide, condylomata lata about the anus or vulva, or leucoderma colli may be seen. Mimicry again may lead the physician into error, as the sparse eruption may simulate psoriasis or lichen planus; the leucoderma of the neck may be mistaken for vitiligo; and the peri-anal rosette of flat condylomas have often been diagnosed external hemorrhoids.

The recurrent secondary syphilide may be extremely bizarre in many respects. For instance, the annular papular syphilides about the lips, nose and eyes, which are definitely limited to the negro, or, in pregnancy, when the hypertrophic papules or flat condylomas are striking in size, color, and number. Follicular syphilides are of the small papular type, are built around a hair follicle and show a distinct tendency to grouping and hyperpigmentation. Vesicular lesions of syphilis, except for those of the new born congenital type, are exceedingly rare. Also frankly pustular lesions are uncommon. In interpreting an eruption suspected of being syphilis—if of the earlier type—a careful search will usually reveal supportative findings. Of these, the more common are generalized superficial gland enlargement, mucous membrane lesions, headache, general malaise, genital and anal lesions, iritis and alopecia. A careful general examination is extremely important in all cases of early syphilis. Symptoms such as continuous headache, lassitude, loss of weight, arthralgias, and anorexia, may precede or accompany the secondary eruption, and such symptoms, in the absence of eruption, should arouse the examiner's suspicion of the possibility of syphilis.

The blood Wassermann test is usually exceedingly reliable in the secondary phase of syphilis. The Cooperative Clinical Group studies show that the better serologic tests are 99% positive during this phase of syphilis. In consideration of this fact, let us not distrust it in cases of lichen planus or pityriasis rosea, which may quite closely simulate syphilis.

Speaking generally, eruptions of syphilis often show a tendency to grouping of lesions and circinate configuration, which findings are always suggestive, and, while more frequently seen in late eruptions, they are often seen in certain types of the secondary period.

Although every lesion of syphilis depends upon the immediate presence of the spirochaete for its existence, there is little or no possibility of communicating the disease to others through the dry non-eroded types.

IN CONCLUSION

1. Early diagnosis is imperative if we are to stamp out syphilis.

2. Early diagnosis means diagnosis in the sero-negative primary stage.

3. A diagnosis should not be based upon the clinical characteristics of a genital sore.

4. The patient's history is apt to be misleading.

5. The time to cure paresis and tabes is in the sero-negative primary stage of syphilis.

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THE PREVENTION AND TREATMENT OF NEUROSYPHILIS*

Results in Seventy-two Cases of Asymptomatic and Clinical Neurosyphilis by Combined Artificial Fever and Chemotherapy

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Theoretically, if it were possible to disseminate to both doctor and patient our present knowledge of the effective methods of therapeutic management of syphilis, it would be possible to prevent all the late sequelae of the disease. In spite of the fact that this utopia is possible, thousands of cases of syphilis in the completely disabling stages of neurosyphilis reach the neurologist each year for treatment. This paper, therefore, reviews some of the salient points in the pathogenesis of nervous system syphilis, emphasizes the importance of detecting it in its pre-symptomatic phase, and reports on the favorable results obtained in 72 patients by combined artificial fever and chemotherapy.

PATHOGENESIS AND RECOGNITION OF ASYMPTOMATIC NEUROSYPHILIS

It has long been known that it is in the chancre stage that spirochetemia, or blood stream invasion, takes place; and that invasion of the central nervous system by the spirochete, if it is to occur at all, occurs very early in the disease. If the nervous system remains uninvolved during this stage, it is very seldom involved later. This means that an early examination of the cerebrospinal fluid in fresh syphilis enables us to pick out the potential late cases of grave neurosyphilis. One of us (A.E.B.)(1) has reported our experiences in the examination of fifty-seven cases during the first year of the disease, showing that 31 per cent of these patients had positive changes in serology in the cerebrospinal fluid. Many authorities such as Cornaz(2), O'Leary(3), Klauder(4) and Moore(5) have reported similar experiences. The experiences of these men in examining the cerebrospinal fluid early in the disease of syphilis have shown an average of about one-third positive fluid reactions. These abnormal cerebrospinal fluid findings without subjective or objective clinical manifestations of neurosyphilis make up the latent type of neurosyphilis, called asymptomatic neurosyphilis. This stage is the precursor of active clinical neurosyphilis.

A recent Cooperative Clinical Group report(6) emphasizes the fact that recognition of this stage of the disease is only possible by means of a complete study of the cerebrospinal fluid. This must consist of a cell count, protein content, a Wassermann or flocculation test, and a colloidal gold or mastic test. These asymptomatic positive spinal fluid patients can then be classified into four groups:

	Cells	Protein	Wassermann	Colloidal Gold
1.	10	slight increase	negative	negative
2.	10+	definite increase	weak positive	slight change
3.	30-100	definite increase	positive	definite change
4.	high	marked increase	strong positive	paretic curve 5555543210

All syphilis patients under treatment early in the disease should have this type of analysis of the cerebrospinal fluid. This examination should be performed within six months after treatment is begun. If all the tests are completely negative, no more tests are needed unless a previously negative blood reaction again becomes positive, or the patient neglects treatment. If some of the findings are positive (Groups 1 to 3), repeated tests should be performed every six months while the patient is under treatment to detect the trend toward the dementia paralytica type. If, in spite of intensive chemotherapy, the spinal fluid remains resistant, or shows progression toward the paretic type (Group 4), fever therapy should be administered. If, on the first spinal fluid examination, all the findings are strongly positive (Group 4), most authorities believe that fever therapy should be given at once because of the danger of rapid progression to clinical paresis.

In latent syphilis after the secondary stage and in late syphilis, spinal fluid examinations are always necessary. If the spinal fluid findings are completely negative four years after the onset of infection, no re-checks are necessary, as these negative cerebrospinal fluid cases late in the disease practically never develop neurosyphilis. If abnormal cerebrospinal fluid findings are discovered in the late stages of syphilis, the cerebrospinal fluid tests should then be the sole guide instead of blood tests in treatment.

A study of 565 cases of asymptomatic neurosyphilis by the Cooperative Clinical Group(6) shows that patients with early, less severe spinal fluid changes have a good prognosis for treatment by intensive chemotherapy; that under inadequate early treatment there is three times as much chance for clinical progression of disease; and that the addition of tryparsamide, intraspinal, or fever therapy definitely increases the percentage of serologic reversals.

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These facts re-emphasize the importance of early spinal fluid examinations in order to bring patients under early continuous treament if we are to prevent the late neurosyphilis complications.

THE INFLUENCE OF FEVER THERAPY IN THE PREVENTION OF LATE NEUROSYPHILIS

As a result of extensive experience with thousands of cases of syphilis in a region in the tropics where malaria is endemic, Needles(7) found 31 per cent of the inhabitants were syphilitic, showing positive blood Wassermanns. Of some 12,000 patients he found only one case of neurosyphilis, and that patient had never had malaria. As a result of this observation, Needles' concludes that endemic malaria probably prevents neurosyphilis.

O'Leary(8), in a study of 89 patients with the resistant type of asymptomatic neurosyphilis, added malarial therapy to his treatment These patients received an average of 12 malarial febrile paroxysms with no other follow-up treatment. After six months, he found the spinal fluid serology partially or completely reversed in 77 per cent of patients. He concluded that malarial therapy is indicated in all cases of resistant asymptomatic neurosyphilis which do not attain a reversal under routine chemotherapy, or show a tendency to progression in their cerebrospinal fluid formula to the paretic type, or have developed subjective or objective symptoms of clinical neurosyphilis.

It is also worthy of note that patients who received adequate routine chemotherapy and later malarial fever therapy showed no clinical progression of neurosyphilis, whereas those with an inadequate amount of arsphenamine and heavy metal prior to malarial therapy showed clinical progression into the serious stages of dementia paralytica, tabes dorsalis, meningovascular syphilis, optic atrophy, etc.

Of recent years, the weight of cumulative clinical evidence along with experimental evidence indicates that fever alone is the therapeutic agent in malarial therapy that prevents and cures these late sequelae. Bessemans(9) over ten years ago showed that the spirochaeta pallida is destroyed in local lesions by heat that the body cells can tolerate. Simpson(10), Boak, Carpenter and Warren(11), and others have confirmed these experiments and shown that temperatures of 105° to 106° F. markedly inhibit spirochetal growth. When these spirochetes have invaded systematic tissues, however, they gradually develop more virulence or become more heat resistant. Therefore, combined artificial fever and chemotherapy give better clinical and serologic results than either agent alone.

At the University of Nebraska College of Medicine, we started three years ago experimenting with artificial fever therapy combined with chemotherapy. In the Fever Research Department we have treated a large number of cases of resistant syphilis, so-called blood Wassermann-fast blood syphilis, asymptomatic neurosyphilis, and resistant advanced clinical neurosyphilis. The results in one of these resistant groups have been reported elsewhere(12). During this three year period, 92 cases of various types of neurosyphilis were given 846 fever treatments. Of these patients, 72 have been followed a sufficient length

TABLE 1—10 PATIENTS

Case Number	Previous Chemotherapy	Hours of Fever	Months of Observation	*Blood When Last Seen	*Spinal Fluid When Last Seen
1	Much	29	0	Rem-	Unch+
48	Much	50	0	To-	To-
56	Much	30	7	Less+	To-
57	Much	45	0	To-	Less+
60	Much	47	5	To-	To-
61	Much	50	2	Unch+	To-
70	Much	30	10	Rem-	To-
46	Some typhoid vaccine	25	18	To-	To-
77	Much	30	3	Less+	To-
78	Much	50	0	Unch+	Less+

*"To-" indicates Reversed to negative.
"Less+" indicates Less positive.
"Rem-" indicates Remained negative.
"Unch+" indicates Unchanged positive.

Spinal fluid serology:
Complete reversal ....7 patients, 70 per cent
Partial reversal ....2 patients, 20 per cent
Unchanged ....1 patient, 10 per cent

TABLE 2—19 PATIENTS

Case Number	Previous Chemotherapy	Blood	Spinal Fluid	Months of Observation	Clinical Result When Last Seen
5	None	Unch+	Unch+	2	A
7	None	Unch+	Less+	32	A
9	3 yrs.	To-	Less+	9	B
35	Much plus malaria	Rem-	Rem-	4	A
36	Little	Unch+	Less+	36	A
37	Much	Unch+	Unch+	19	B
40	None	Unch+	Unch+	18	A
42	Much	To-	To-	20	A
43	Tryp. plus malaria	To-	To-	15	C
45	None; aortitis	Less	To-	19	A
50	None	Unch+	Less+	6	A
51	Little	Unch+	To-	36	A
52	Much	Rem-	To-	6	A
67	Little	Unch+	To-	15	A
4	Much plus Swift-Ellis	Less	Less	8	A
Tabo-paresis					
10	Much malaria	Rem-	To-	15	A
8	Little	Unch+	Unch+	22	C
2	Much	To-	To-	10	B
6	None	Unch+	To-	25	A

A—Marked improvement (remission); returns to or maintains his former economic and social status.

14 patients, 73 per cent.

B—Improved but has not regained former earning capacity.

3 patients, 16 per cent.

C—Unimproved.

2 patients, 11 per cent.

of time with adequate follow-up data to enable evaluation of therapeutic results.

Our method of artificial fever induction was by means of the Kettering hypertherm, combined with arsenic in the form of mapharsen* (meta-amino-para-hydroxy-phenylarsine hydrochloride) or bismarsen* (bismuth arsphenamine sulfonate). The antisyphilitic drug was injected soon after the fever reached its maximum height. A minimum course of artificial fever therapy for neurosyphilis was considered to be 50 hours of sustained fever between 105° and 106° F., and most of our patients received this amount in ten weekly sessions of 5 hours each. Some, however, for various reasons received smaller amounts, down to as little at 23 hours, while a few were given larger amounts, in one case 94 hours. A large percentage were treated as out-patients, or remained in the hospital only overnight following the treatment.

ASYMPTOMATIC NEUROSYPHILIS

Of 10 patients all but one, No. 46, had had many years of routine chemotherapy. The duration of the infection ranged from 7 to 30 years; all were considered to be Wassermann-fast; all had strongly positive spinal fluid reactions. Mapharsen was the antisyphilitic drug used in combination with fever therapy in these patients.

TABLE 3—31 PATIENTS

Case Number	Previous Chemotherapy	Blood	Spinal Fluid	Months of Observation	Clinical Result When Last Seen
3	Much sulphur in oil Aortitis	N.D.	Unch+	22	A—Died 22 months later of pneumonia.
11	None	Unch+	To-	9	B—Slight recent relapse.
12	Much	Unch+	To-	22	A
14	Little; age 57	N.D.	Rem-	15	B—Slight recent relapse.
15	None; age 58	Unch+	To-	22	A
16	None; age 58	N.D.	N.D.	6	A
17	Much	Rem-	Rem-	26	A
18	Much+malarial. Recommended for chordotomy. Morphine addict.	Rem-	Rem-	21	A—Died 21 months later; causes unknown.
19	None	Less+	Less+	8	A
20	None; hot baths.	N.D.	N.D.	27	B
21	Much+Swift-Ellis and deep x-ray.	Rem-	Rem-	30	A
22	None; age 69	Unch+	Less+	8	B
23	None	To-	N.D.	21	B
24	None	To-	Rem-	9	A
25	None; morphine addict.	To-	To-	32	A
26	Little; hot baths; age 56. Hypertension; femoral aneurism.	Rem-	Rem-	2	C
27	Much+malaria; age 63; morphine addict.	Rem-	Rem-	4	B
28	Much	To-	To-	12	B
29	Much	Rem-	To-	17	A
30	Little	Unch+	N.D.	20	B
31	Much+malaria	Rem-	Rem-	0	B
32	Little	Rem-	Rem-	30	A
33	None: malaria	Less+	To-	13	B
34	Much+malaria	Unch+	To-	6	B
47	Little	Rem-	N.D.	12	A
55	Much; hot baths; spinal drainage; age 80.	N.D.	N.D.	5	C
58	Much	Rem-	Rem-	27	A
62	Little; morphine addict; age 60.	Rem-	Rem-	4—	A
69	Much+malaria	Less+	Unch+	4	C
71	Much+malaria	Rem-	Less+	24	C
41	Little	To-	Unch+	2	A

N.D.—No Data.

A—Markedly improved, with practically complete relief of all predominating symptoms	16 patients, 52 per cent
B—Moderately or slightly improved	11 patients, 35 per cent
C—Unimproved	4 patients, 13 per cent

We have not yet had an opportunity to recheck the spinal fluid in those patients who did not get a complete reversal. From our experience we believe it quite likely that when three or more months have elapsed and we recheck their spinal fluid, it will be entirely negative in spite of no further chemotherapy, or with relatively a small amount, such as 12 bismuths. Results such as these leave no doubt of the fact that the best time to treat paresis and tabes with fever is before they develop to that stage.

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*We are indebted to Parke, Davis & Company, Detroit, Mich., for supplying us with Mapharsen used in these investigations, and to Dermatological Research Laboratories, Philadelphia, Pa., for the Bismarsen.

GENERAL PARESIS AND TABO-PARESIS

The results obtained in 15 patients with general paresis and 4 with tabo-paresis are indicated in Table 2. Mapharsen was the antisyphilitic drug used with these patients, one dose at the height of each fever session. Following their artificial fever therapy, most of them were given tryparsamide and bismuth. Some were quite early cases, but most were incapacitated from useful work; about half required psychiatric hospitalization, while the other half were treated as out-patients. Three had previously received malarial fever therapy with little or no improvement.

Of these 19 patients, therefore, 14, or 73 per cent, were clinically complete remissions; 3 were improved; and 2 were unimproved.

The clinical result in No. 43, one of the cases listed as unimproved, requires further interpretation. This patient came to us an expansive paretic, unimproved by 16 months' psychiatric hospitalization with full courses of malaria and tryparsamide. Following fever therapy, he improved to good occupational status, but several months later he relapsed into a profound depression that may well be functional since there are none of the characteristic sensorium changes of paresis. However, we have classified him as a treatment failure because at present he lacks his former occupational and social status.

A disappointment was our inability to relieve completely paretic convulsions; 4 patients previously having grand mal seizures still have occasional petit mal attacks and are still under phenobarbital therapy. They are numbers 7, 36, 42 and 51 in Table 2. However, all are classified as markedly improved, since all have regained or maintained their former occupational and social status despite their continued phenobarbital therapy.

TABES DORSALIS

The majority of the 31 patients in this group were very severe types of tabes, with extremely resistant symptoms. Many were failures with numerous previous therapeutic efforts, 7 being malaria failures. Almost half were the so-called burned out seronegative type, notoriously unresponsive to treatment.

Bismarsen was the antisyphilitic drug used with this group of patients, 0.2 grams with each fever session. The after-treatment varied; some received no further chemotherapy; others bismuth for several courses; others tryparsamide with or without bismuth. To some degree this depended on the amount of previous treatment, the age and physical condition of the patient, the amount of symptomatic relief after fever, the serologic status after fever, and the presence of slight degrees of optic atrophy.

The changes in five important individual symptoms in each of the 31 tabetic and the 4 tabo-paretic patients are graphically shown in Table 4.

TABLE 4

Case Number	Neuritic Pains	Gastric Crises	Ataxia	Charcot Joints	Incontinence
3			I-M		
11	M-O	S-I			
12	S-M	M-O	I-O		
14	I-M				
15	S-O		I-O		
16	S-O	I-O			
17	I-O				
18	S-M	S-M			
19	M-O		I-O		M-O
20	I-M			M-M	
21	S-O				
22	I-M				
23	S-M				
24		M-O	M-O		
25		S-O			
26	S-S		S-S	S-S	I-I
27	S-M	S-O	I-M		I-O
28	M-O	M-M			
29	I-M	M-M			M-O
30	I-M		S-M		
31	S-I		I-M		
32	I-O	S-O			
33			S-I		I-M
34	I-M				
47	M-O	M-O	M-O		M-O
55	S-S	M-M	S-S	I-I	I-I
58			I-O		
62	I-O	S-O			
69	I-I	I-I			
71	I-M		I-I		I-I
41	M-O				
Tabo-paresis					
10	M-O		I-I		
8	I-I	I-M			
2			I-M		
6			I-O		

M—Mild
I—Intermediate
S—Severe
O—None

Neuritic pains were, therefore, the most common symptom, being present in 28 of the 35 cases. They were entirely relieved in 12 patients and significantly improved in 12; in only 4 were they completely unaffected by treatment. Reference to Table 3 will show that many of those who gained worthwhile relief had been therapeutic failures by other methods, including Swift-Ellis and malaria. A number were in their late 50's and 60's or physically debilitated, at least 3 being morphine addicts.

Of the 35 patients treated, gastric crises of varying severity were present in 15, at least half of whom were totally disabled by this symptom. Eleven received complete or partial relief; some of these, such as No. 27 and No. 62, were relatively elderly, debilitated patients who could have been treated successfully and safely in no other way.

Ataxia often improved surprisingly; as might be expected, however, when it had reached the late stage considered severe, it disappeared completely in no case.

There were 3 patients with Charcot joints; none showed any improvement in the joint function as a result of fever therapy, while only one of the 3 showed slight general improvement in symptoms.

Urinary incontinence in varying degree was present in 8 patients; 5 showed varying amounts of improvement.

As may be seen in Table 3, serologic improvement was frequent but did not necessarily parallel the amount of symptomatic improvement. Many of the most striking results in the relief of neuritic pains or gastric crises were in fact seen in the "burned-out" cases which were seronegative throughout.

MENINGO VASCUAR NEUROSYPHILIS

There were 12 patients in this group, 5 males and 7 females, ages ranging from 23 to 60 years. The majority of these were seriously ill patients with complicating vascular disorders such as aortitis or hypertension. Mapharsen was the drug used in this group at the height of the fever; the after-treatment varied with the patient.

This entire group presented almost completely disabling neurologic symptoms and findings, and the improvement was often very striking. Because of cardiovascular complications, many were very difficult to carry through fever therapy, and without the advantage inherent in this technique of being able to control the height and duration of their fever, they could not have been successfully treated. At least half of them would surely have been unable to withstand malarial therapy.

TABLE 5—12 PATIENTS

No.	Predominant Symptoms	Months of Observation	Blood	Spinal Fluid	Clinical Result When Last Seen
44	Attacks of aphasia and hemiparesis; cranial nerve palsies.	13	To-	To-	A—No further attacks. Full occupation.
53	Age 60, double hemiparesis with pseudo-bulbar palsy. Sensorium changes, convulsions. B.P. 170/110. Treated with extreme difficulty with aid of nitroglycerine.	26	Rem-	To-	A—Carrying on housework, mentally clear under phenobarbital therapy for persisting petit mal.
59	Headache, increased spinal fluid pressure, 24 mms. Hg, amblyopia; hypertension.	7	Rem-	To-	A—No headache, spinal fluid pressure normal, improved vision, full occupation.
63	Deafness, tinnitus, facial nerve palsy. Spinal fluid cells 100/c.c.	7	To-	Less+	A—Full occupation; markedly diminished deafness. no tinnitus; so 7th nerve palsy.
64	Diplopia; sensorium changes; spinal fluid, cells 75/c.m. Aortitis.	6	N.D.	N.D.	A—Ocular palsies disappeared. Full occupation.
72	Headache, exhaustion, personality changes, vertigo, positive spinal fluid Wassermann.	14	N.D.	N.D.	A—Full occupation. Symptom free.
73	Aseptic meningitis with increased pressure and cell count.	17	Less+	To-	A—Full occupation. No symptoms.
74	3 hemiparetic attacks with residual monoplegia. Dizziness, ataxia, marked aortitis.	5	To-	To-	C—Slight symptomatic relief but cannot work.
76	Multiple sclerosis-like syndrome with cerebellar signs, nystagmus, cranial nerve palsies, amblyopia, vertigo.	39	To-	To-	A—Complete recovery; full occupation.
75	Confusional psychosis, probably toxic infectious; sensorium impaired; previously positive spinal fluid made negative by intensive chemotherapy.	6	Rem-	Rem-	B—Improved but not full occupation.
13	Lancinating cranial nerve root pains, cranial nerve palsies, previous history of treated syphilis.	19	Rem-	Rem-	A—Symptom free. Full occupation.
66	Headache, 4 weeks; hemiplegia 3 days. Spinal fluid, cells 23. Mitral stenosis. Treated with great difficulty, only 24 hours above 105° F.	33	Unch+	To-	A—Complete recovery with full occupation. Only very slight residual neurologic signs.

A—Marked improvement, with complete arrest and full occupation	10 patients,	83 per cent
B—Moderate to slight improvement	1 patient,	8.3 per cent
C—Unimproved	1 patient,	8.3 per cent

SUMMARY

1. With the proper dissemination of our present knowledge of syphilis, most of the late manifestations of neurosyphilis could be prevented.

2. Routine cerebrospinal fluid studies within the first year of the infection make the diagnosis in the asymptomatic stage of neurosyphilis. From this group clinical neurosyphilis develops. The progression of these spinal fluid findings determines the type of therapy indicated and also gives a lead as to prognosis.

3. In asymptomatic neurosyphilis not responding to routine chemotherapy, some form of fever therapy should be given, since accumulated clinical evidence shows that fever therapy given in this stage adequately protects against neurosyphilis.

4. In 10 cases here reported, of late asymptomatic neurosyphilis treated by combined artificial fever and chemotherapy, strongly positive cerebrospinal findings were completely reversed in 7, partially reversed in 2, and unchanged in one.

5. In 19 patients with paralytic dementia, treated by combined artificial fever and chemotherapy, complete remission with full occupational recovery followed in 14, moderate improvement in 3, and no improvement in 2.

6. In 31 cases of tabes dorsalis of the most severe type, many with resistant chronic symptoms, 16, or 52 per cent, had complete relief of all the predominating symptoms; 11, or 35 per cent, had improvement in all predominating symptoms, with disappearance of some of them; while only 4, or 13 per cent, were unimproved. Neuritic pains were definitely benefited or relieved in 24 out of 28 patients. Gastric crises were completely or partially relieved in 11 out of 15 cases. In both groups, the patients benefited were often therapeutic failures by other methods, physically debiliated, or elderly. Ataxia and urinary incontinence also responded to fever therapy in many of these cases. There was no success, however, in the 3 patients with Charcot joints.

7. In 12 patients with severe disabling types of meningovascular neurosyphilis, 10 got complete relief of the predominating symptoms, 1 was to some degree benefited, and 1 was unimproved.

8. The serologic results did not parallel clinical improvement. Occasionally spinal fluid reversals were seen in patients only slightly benefited, while the reverse took place more often.

CONCLUSIONS

I. From our experience, we believe that combined artificial fever with chemotherapy is the indicated method of treating resistant asymptomatic neurosyphilis, as well as the safest and most effective way of managing severe grades of clinical neurosyphilis.

II. While the value of fever therapy in neurosyphilis is undisputed, the evaluation of various types of fever therapy will be finally made by comprehensive studies such as that which the United States Public Health Service and Cooperative Clinical Groups are carrying out, in which our cases are included.

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WHAT GENERALS ARE WORTH

During recent military operations in the Far East one side captured the other's general. An envoy was sent to negotiate his exchange.

"We will give you four colonels for him," said the officer.

The offer was declined.

"Eight majors?"

"No."

"What, then?"

"We have given the matter most careful consideration, and the least we can accept is two dozen tins of condensed milk."

CARDIOVASCULAR DISEASE*

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In a symposium on the subject of syphilis the cardiovascular phase of the disease is deserving of real consideration. This is true for the reasons that the incidence of vascular envolvement is high, that the diagnostic problem envolved is difficult, and that early recognition of the situation is imperative. Careful clinical analysis today indicates that only by early diagnosis and treatment can the disease be arrested or ameliorated.

The incidence of the condition varies to a considerable degree in various parts of the world. Moore(1) states that 2% of the population of the United States are suffering with organic heart disease, and that roughly speaking, 10% of these, or a total of 240,000 people have cardiovascular syphilis.

In a cooperative clinical study(2) comprising statistical information from five large clinics of the country the combined experience of these groups indicates that uncomplicated syphilitic aortitis occurs with about equal frequency in white males and females but that aortic regurgitation is slightly more common in males than females. The group material further shows that in general cardiovascular syphilis is three times more common in colored people than in whites, and that with the development of complications such as aortic regurgitation and aneurism that this difference is as much as seven times more frequent in the colored race. The thought is expressed in this article that the greater incidence of advanced cardiovascular disease in colored people as compared to whites and in males as contraster with females is largely the result of work. Colored people usually do hard manual labor and the occupation of men ordinarily requires greater effort than that of women. Complicating aortic regurgitation and aneurism is more apt to develop under this added strain.

Since lues occurs congenitally or may be acquired at any age in life it follows that cardiovascular syphilis may occur at any time from birth to old age. White(3), however, states that practically the large majority of cases come to notice between the ages of 45 and 55. He further places the interval between the development of the primary lesion and the occurrence of demonstrable clinical signs and symptoms at an average of about 20 to 25 years.

UNCOMPLICATED AORTITIS

The characteristic pathological change in cardiovascular syphilis is the destruction of the media of arteries. No actual proof is at hand to show just why this occurs nor why the treponema should show such a definite predilection for the aorta. It is thought, however, that the changes in the media of the latter are due to an obliterative endarteritis in the vasavasorum.

The reported frequency of luetic aortitis depends upon the minuteness of the pathological examination. Langer(4) has found that 70 to 80% of all syphilitic patients show anatomic evidence of involvement of the aorta. Warthin(5) has increased this figure to 90% while other authors have found a smaller percentage.

From a clinical viewpoint the presence of demonstrable defects in the aorta is very frequently a difficult matter. Langer(4) reports that of 721 cases found at necropsy only 39.3% were diagnosed clinically. Part of the discrepancy suggested by these figures is due to the fact that the pathological lesion is at times so minute that it escapes clinical detection. Another group of the cases occurs in individuals of over 50 years of age in whom the changes of hypertensive cardiac disease are indistinguishable from a luetic envolvement. Finally a third group escape clinical recognition because of a failure to properly examine the patient for the characteristic signs and symptoms of the disease.

Everyone who has studied the subject agrees that aortitis per se is a condition usually non-productive of clinical symptoms and that only a planned effort to make an early diagnosis of the disease can hope to be successful. For this reason various medical groups interested in the subject have made a concerted effort in recent years to arrive at a satisfactory agreement as to what signs and symptoms by their presence gave reasonable proof of the presence of a syphilitic aortitis. Their conclusion is that the most valuable sign is the teleoroentgenographic and fluoroscopic evidence of aortic dilatation.

To have any diagnostic value the teleoroentgenogram must be made under certain standard conditions. First, the roentgenogram must be taken at a distance of six feet to avoid magnification of the image. The subject must be standing, for in the horizontal position the diaphragm is elevated thereby changing the axis of the heart. The exposure must be made on suspension of natural inspiration for forced inspiration lowers and complete expiration elevates the heart, thus decreasing or increasing the transverse cardiac diameter and modifying the picture of the aorta. Roentgenograms should be made in two positions. In the posterior-anterior position measurement of the aorta is accomplished by the method of Vaquez and Bordet(6) that is by adding the measurement of the farthest point on the ascending aorta to the right of the mid-sternal line to the measurement of the farthest point of the aortic knob to the left of the mid-sternal line. The sum gives a figure representing the total width of the shadow comprising the aortic arch and excludes the shadow of the descending aorta. It is not, however, a true figure for aortic diameter but represents merely the width of the aortic arch.

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*Read before the Annual Assembly of The Nebraska State Medical Association in Lincoln, April 26, 1938.

Maynard(7) in his study of syphilitic aortitis concluded that any aorta in which this measurement was less than 6 cm. was normal. If either on the roentgenogram or by fluroscopic observation a bulging was noted he felt that the aorta was definitely abnormal. In any case, with or without evidence of bulging he considered that a measurement of 7 cm. or above was adequate evidence of aortic dilatation.

According to Friedman(8), "In the left anterior oblique position (about 45 degrees) measurement of the aorta is accomplished by drawing a line from the ascending limb of the arch to the outer border of the descending limb. The chest cage is measured at the same level from the right anterior wall to the left costo-vertebral articulation. This measurement is an obique diameter of the thorax. By divinding the thoracic width by the aortic width, a quotient representing the transverse index of the arch is arrived at, which varies in normal individuals between 1.9 to 2.3 or over. An index below 1.9 is presumptive evidence of a loss of elasticity associated with aortic elongation."

As has just been stated in the group study the most important sign of uncomplicated luetic aortitis was considered to be evidence by x-ray of aortic dilatation. Other signs and symptoms listed by these workers in the order of their importance were as follows:

Second—A tympanitic, bell-like, tambour accentuation of the aortic second sound.

Third—A history of circulatory embarrassment.

Fourth—Increased retromanubrial dullness.

Fifth—Progressive cardiac failure.

Sixth—Substernal pain.

Seventh—Paroxysmal dyspnea.

Two additional signs occurring with sufficient frequency to be at least mentioned were a systolic murmur in the aortic area, and a visibly or palpably increased pulsation in the episternal notch.

In the differential diagnosis of the condition it is quite evident that roentgen evidence of aortic dilation might be due to arteriosclerosis or to essential hypertension. In people of over 50 years of age this is so apt to be the case that the x-ray findings are not of much value, but in individuals of less than this age or where the arterial tension is below 140 mm. of mercury the presumption is in favor of syphilis. It is also true that in uncomplicated aortitis that there is no resultant change in blood pressure, nor is there as a rule a concomitant envolvement of the myocardium or the heart valves. In consequence the cardiac dilatation and hypertrophy noted in cases of rheumatic heart disease, arteriosclerosis, and hypertension is absent and teleoroentgenographic measurements reveal a normal sized heart with the dilated aorta. The presence of an accentuation of the aortic second sound is of course common to both aortitis and hypertension from other causes. Carter and Baker(9), however, report that the peculiar tympanitic, bell-like, tambour accentuation of the sound is peculiar to syphilitic aortitis and is not heard in ordinary hypertension. Attacks of paroxysmal nocturnal dyspnea are uncommon in hypertension without evidence of ventricular failure but are frequently present in luetic aortitis especially if aortic regurgitation is present. Substernal pain is undoubtedly the earliest clinical symptom produced by aortitis. This pain differs from angina in that it is not associated with anxiety and is not referred to the arm.

Mitral heart disease of course produces circulatory embarrassment and progressive cardiac failure. In addition, on occasion there has been noted changes in the aorta which might possibly be confused with aortitis. Such changes are rare.

One of the greatest pitfalls in the diagnosis of syphilitic aortitis is the absence of a positive blood Wassermann in 25% of the cases. A positive history of chancre, a positive spinal fluid, or the association of other conditions such as tabes, or some other definite syphilitic manifestation may overcome this obstacle.

In the final analysis of the situation the conclusion of the various groups studying the question is that the presence of three or more of the signs and symptoms mentioned previously in a patient under 50, free from mitral disease, and in the absence of hypertension is strong evidence for the diagnosis of uncomplicated syphilitic aortitis.

AORTIC REGURGITATION

The first manifestation of cardiovascular syphilis is the uncomplicated aortitis just described.

This, if untreated, is very apt to be followed by an aortic regurgitation. In a series of 6,253 cases studied by the cooperative groups(2) it was found that this latter complication occurred in 4.1% of the cases. It was further discovered that twice as many negroes as whites were so affected, and that males suffered with the condition more frequently than females.

As in uncomplicated aortitis, aortic regurgitation is generally devoid of symptoms and it is not until late stages of the disease that interference with coronary circulation or left ventricular failure produces symptoms characteristic of these conditions.

The earliest sign of regurgitation is a very soft, almost inaudible, blowing, early diastolic murmur which is heard best at the end of expiration with the patient leaning forward along the left border of the sternum, over the sternum between the second and third ribs, or to the right of the sternum in the second interspace. Under the fluroscope a marked systolic pulsation of the aorta is noted but at the onset the changes in the heart and aorta may be so moderate that only careful teleoroentgenological measurements may reveal the cardiac enlargement and the accompanying aortic-dilatation.

Later the usal text book picture of the disease is manifest. The murmur becomes more evident, and is associated with a functional diastolic mitral murmur which was first described by Austin Flint. The pulse acquires the typical water hammer character produced by high systolic and low diastolic pressures. Pressure over the large peripheral arteries reveals the characteristic double murmur or Duroziez's sign. A capillary pulse is present and the heart becomes of tremendous size as a result of left ventricular dilatation and hypertrophy.

AORTIC ANEURYSM

A second complication of syphilitic aortitis is the development of an aneurysm. This may be of fusiform type involving all of the coats of the aorta, or sacculated. In the latter case it occurs as a definite tumor bulging out from the arterial wall. The condition, which develops according to White(3) in 10% or less of the cases, is found most commonly in the ascending portion of the aorta, less frequently in the aortic arch, and least often in the descending aorta.

As in other forms of cardiovascular syphilis, aneurysm may exist for a considerable period of time without development of symptoms. This depends in large part on the location of the pathological condition. If it is located in the transverse arch or the first part of the descending aorta, pain may develop early as a result of pressure upon neighboring structures. In other areas the tumor mass may develop to a very great degree without any subjective complaints. If the aneurism involves the descending portion of the arch pain is apt to be constant and excrutiating because of erosion of vertebral bodies and pressure on nerve roots.

As a result of pressure on the recurrent laryngeal nerves, most often the left, the patient may develop spasm of the larynx, interference with swallowing, and a peculiar brassy cough. With greater pressure a vocal cord may be paralyzed and the voice be made husky. Irritation of sympathetic nerve fibers at the root of the neck may cause dilation or contraction of the pupil on the affected side.

Difficulty in swallowing may be occasioned by pressure on the recurrent laryngeal nerve or on the esophagus. Pressure on the trachea may produce a persistent hacking cough, or it may develop to such a degree that varying amounts of pulmonary collapse may develop. With pressure on the return of venous blood collateral circulation may arise. The superior vena cava is rarely affected to a sufficient degree to produce such a phenomenon but the subclavian or the jugular particularly on the left side may be obliterated.

Upon physical examination, inspection and palpation of the anterior chest from the level of the base of the heart to the sternal notch may reveal a definite exponsile pulsation. If the pulse in both radial arteries is examined simultaneously a weakness may be detected on one side, and blood pressure readings made on either arm may show a difference in systolic pressure of 20 mm. or more. A discrepancy in diastolic pressure may also be noted. Percussion may reveal an increased retro manubrial dullness. Upon auscultation a long systolic murmur may be heard over the aneurism and this may be accompanied by the diastolic murmur of an associated aortic regurgitation. A tracheal tug may be occasionally elicited by pressure on the cricoid cartilage with the head bent forward.

The final criterion in the diagnosis of aneurysm is based on the results of Roentgen observation. Under the fluroscope with thick barium in the esophagus the expansile tumor pulsating with each systole may be discovered. The displacement or obstruction of the esophagus is helpful in this observation. Teleoroentgenographic measurements are also of value in such cases.

Aneurysms may also develop in other large vessels of the body as a result of cardiovascular syphilis. These, however, aside from their history and blood findings bear no especial features which distinguish them from aneurisms due to various other causes.

CORONARY OCCLUSION

A rather frequent complication arising in the course of cardiovascular lues is the development of a disturbance in coronary circulation. The pathology in such cases is usually located in the mouths of the vessels and gives rise to the anginal pain so often experienced in the disease.

Farther along the course of these vessels a mesarteritis may produce obstruction, narrowing, and thrombosis with the usual signs of shock, sudden death, etc.

MYOCARDIAL ENVOLVEMENT

In some instances gummata develop in the myocardium itself producing heart muscle weakness but more especially interfering with conduction producing the picture of fibrillation, bundle bronch block, etc.

LEFT VENTRICULAR FAILURE

The advent of left ventricular failure is usually the terminal event in the patient suffering with cardiovascular syphilis. This is associated particularly with dyspnea. It is stated that the anginoid pain suffered in such cases is very apt to disappear but Moore(1) reports this is not always the case.

PROGNOSIS

The development of cardiovascular syphilis is always a serious manifestation of luetic disease. The presence of uncomplicated aortitis, however, does not offer the same serious prognosis as the development of one of the complicating conditions, and the use of adequate treatment further improves the outlook in such cases. In the cooperative group study it was found that with adequate treatment in those patients who died, life was prolonged from 34 to 85 months. 65% of the patients treated were symptom free and showed no progression of symptoms after one year whereas 49% who had inadequate treatment did show progressive changes. Cole(10) reported that progression of symptoms occurred in 7.1% of cases. His statistical evidence also indicated a definite prolongation of life and relief from symptoms in the complications of cardiovascular syphilis with proper therapy.

Death in cardiovascular syphilis is usually the result of congestive or left-ventricular failure. A certain number die as the result of coronary artery occlusion and 50% of the individuals suffering from aneurism are lost as a result of rupture.

TREATMENT

The best treatment of cardiovascular syphilis is to prevent it. Cole(10) reports that of 3,641 cases in which treatment was administered in the early stages of infection less than 1% developed cardiovascular syphilis, and with the exception of two individuals, no sign of vascular disease was found in those patients whose treatment had been given regularly and in adequate amounts. Since 71% of Cole's cases were followed for less than three years, it is quite probable that more instances of the disease will appear as the observation period is extended.

In the active treatment of cardiovascular syphilis the first consideration is the condition of the heart. In patients suffering with ventricular failure bed rest, digitalis and diuretics must be administered.

The specific treatment of the disease according to Cole depends on the individual's response to treatment. In any case he points out it is very necessary to avoid reactions even as mild as a moderate gastric upset.

The initial step in therapy must be the administration of either bismuth or mercury compounds to prevent a "therapeutic paradox." The patient after such a course should be started, very cautiously, on a dose of neoarsphenamine, 0.05 or 0.1 gm. gradually increasing to a maximum dose of from 0.2 to 0.45 gm. depending on body weight, a course of twelve treatments being given. A dose of 0.3 gm. should rarely be exceeded except in individuals suffering with uncomplicated aortitis. Following the arsenical treatment the patient should then be given twelve doses of bismuth, for example bismuth salicylate in a dose of 0.1 gm. or sodium potassium bismuth tartrate 0.1 gm., at weekly intervals. If such treatment is well tolerated it should be continued over a period of two years. During this interval and subsequently the patient should be kept under close observation and if possible a certain amount of treatment should be continued throughout life. Since cardiovascular symptoms are as a rule late manifestations of syphilis it follows that the patient frequently remains Wassermann fast. This does not preclude a very good clinical result and the patient must be so advised in order that he may avoid discouragement. The essential point in therapy must be to avoid too vigorous treatment and to be guided to a large extent by the symptoms.

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DISCUSSION

DR. O. J. CAMERON, (Omaha): Mr. Chairman and Gentlemen: I have been greatly interested in and pleased with the papers presented this morning. I was particularly struck with Dr. Zimmerer's remarks that during the past year but 35 new cases have been picked up by the Department of Health, and 95 who have lapsed or disappeared from treatment have been placed back on treatment with their physician or clinic. To me that is a low figure. It means, men, that something is wrong. The thing probably wrong is that we, as physicians, fail to cooperate with the Public Health Department and its officers in getting these cases under treatment, and forcing others back on treatment.

I wonder how we can expect to accomplish anything in the control of syphilis when we realize that, with the best efforts we can put forth to keep our patients under prolonged, adequate treatment, three out of every four cases of early syphilis disappear from treatment within a few weeks or two months. Coupled with this is the fact that for every case we recognize early, there are at least two cases at large that do not come under treatment during the first year. That first year is when they are particularly infectious and a source of spread of the disease. We must be better case workers and case getters. We must get patients under treatment and try to keep them under treatment. That is a real job. It is difficult to get the names of contacts and approach them and get them under treatment.

I understand that from now on we will have the support and cooperation of our Public Health Department and local health officials in helping to get these contacts under treatment. So far, apparently no one has had great success in this respect. I want to accentuate again the fact Dr. Tomlinson mentioned, that only 6 per cent of the cases of early syphilis have been brought under treatment during the sero-negative primary stage, which is the stage presenting a golden opportunity for cure—about one case in 20. That is not enough.

Too many are treating genital lesions as something other than syphilis. They should be regarded as syphilis until proven otherwise. A dark-field examination should be made by someone who knows how to interpret it.

I want to emphasize what Dr. Thompson spoke on in the treatment of cardiovascular syphilis. Here caution is mandatory as regards the use of arsenicals. He said small doses of arsenicals are effective. By and large, much can be done with rest, bismuth, mercury, iodides, and perhaps less of the arsenicals. If arsenicals are used, they should be used late in the treatment and given in small doss.

I was very much interested in Dr. Bennett's results. I think they are excellent. I was also impressed by Dr. Dennie's results in these cases of resistant syphilis, showing the effects of fever given in such an easy manner. I wonder if many physicians may not attempt to treat patients in the home with just hot baths? I think Dr. Dennie must have had an excellent technique for giving these baths. If we just tell our patients to take a hot bath, we will not be helping them much. Fever must be given by definite, scientifically controlled means if it is to be effective. Dr. Dennie's results are indeed striking.

There is one thing that needs discussion. We constantly encounter this fact: People will come in with obvious manifestations of syphilis with the story they have been under continuous treatment with arsenicals and heavy metals. Usually those treatments have been of obscure type. They are unable to tell what brand of drug has been used. There are ineffective arsenicals peddled to the profession—sometimes with the plea that they are sold very reasonably, with a sales talk that says in effect, "The treatment you are using is obsolete." That is wrong. The average physician knows what drugs are available from reputable firms. I would advise physicians to use the preparations which are known to be effective, such as bismuth salicylate, rather than some obscure brand. It is important to adhere to effective methods of treatment.

Many patients who come with late recurrences have been under more or less ineffective drugs. When we see them in our clinics or offices, we should put them on old arsphenamine of known definite therapeutic value, and plenty of heavy metal, preferably bismuth, and those late manifestations will usually disappear. Perhaps they would with poorer types of drugs; but anyway, it is best to use recognized, reliable drugs in the treatment of syphilis.

DR. R. B. PALMER, (Lincoln): Mr. Chairman and Members of the State Association: At the Washington Conference on Venereal Diseases some 900 doctors, state and city health officials and educators were asked to recommend a nation-wide program for the control of venereal disease. This consisted of a three-part plan: (1) Early recognition and reporting of cases; (2) adequate treatment, and (3) education of the physicians and the lay public.

You are aware of what your organization has done in the Speakers Bureau toward the education of the public. As Dr. Tomlinson said, there is no doubt it will do a great deal of good, if continued, in having the patients seek the service of a physician early in the disease. I think it is timely we have a Symposium at the State Association with such able specialists as are on our program this morning. We should educate the public and also the doctors.

As Dr. Tomlinson stressed, one of the main things in early diagnosis is the suspicion it is an early primary or cardiovascular lesion. We have heard these things in medical schools. We go out in the smaller towns and do not see much syphilis, and forget about it. One of my colleagues used to say, "You can not diagnose what you do not think of." The general practitioner says the dermatologist looks at a skin eruption and says, "Is it syphilis, or isn't it syphilis? If it isn't syphilis, what the h—l is it?" If we would rule out syphilis first, we would do a great deal toward the eradication of the disease.

I have no comment to make on fever therapy, which is a great adjunct. While some homes have three or four bathrooms, Dr. Dennie is an optimist if he thinks there is a bathroom available to every patient. You can raise temperatures by wrapping them in a well insulated blanket. Heat therapy is nothing for the amateur to play with.

DR. PAYSON ADAMS, (Omaha): I wish to congratulate Dr. McMartin upon the clear, practical way in which he has presented this subject. Caution should be used in the type and strength of local urethral antiseptic irrigating solutions. It is possible but not desirable to sterilize the urethra by killing the surface gonococci with strong concentrated antiseptics, for these gonococci are of no serious concern. Much damage, however, may be done to the urethral mucosa with such irrigations. The harmful gonococci are located deep in the submucosa, where they are well removed from possible contact by the irrigating solution. Mild, dilute irrigating solutions are helpful in stimulating and maintaining local tissue resistance.

Treatment of gonococci infections with sulfanilamide is a moot question. In a personal series of 35 cases of gonorrhoea treated with sulfanilamide 33 were followed accurately and for an adequate length of time to be dependable for quoting. Of these 33 cases, 22 cases were cured promptly, 7 of these were of long standing chronic posterior urethral type. There were 11 failures. In other words, 66 2/3% of the cases were cured. I think this is better than we can do by using local injections alone.

I have given larger doses of sulfanilamide in this series of cases than the dose quoted by Dr. McMartin. The usual procedure was to start the patient on 60 to 80 grains of sulfanilamide per day (depending upon the individual) for four days: dropping to 60 or 40 grs. a day for an additional three days; then to 40 or 30 grains a day for one week; then to 20 grains a day for one week. This long-continued (three week) treatment is most desirable and effective.

DR. E. E. ANGLE, (Lincoln): I am glad to have the opportunity of opening the discussion at this point, because I feel gonorrhea should not have just one paper on our program, and syphilis have four or five. I feel we should give a free discussion to this subject, because it is so important. I want you to know I think Dr. McMartin's paper was just about right, except he was pretty modest in carrying you along with the idea that sulfanilamide was so important in his good results with a large series of cases.

If you read between the lines, it has been a good agent the way he has used it, but he could probably have carried the same group with nearly as good results without it. He was modest in saying he had very few complications. You will notice along with the dose of sulfanilamide, he said it was important early urethral injections be mild; that you follow the case along and give these cases time in your office so that they will understand the dangers of sexual excitement and alcohol. He takes time to check any case that has run an appreciable length of time, and he has a beautiful series of cases of acute and subacute gonorrhea in which he has used sulfanilamide.

We had several cases in my office that have taken it in large doses lately, and still have urethral discharge and prostatic infection. Within a week I saw a case with gonorrheal rheumatism who had had proper doses of sulfanilamide. I am glad to see these cases, because you can stop sulfanilamide and still get results with proper treatment of the complication. You must be on the lookout for infection in the prostate if the disease has passed three or four weeks. In our experience we have found with gonorrheal rheumatism, the fever therapy is of very great advantage.

I agree with Dr. McMartin in the use of small doses of sulfanilamide. It cures a certain number, and prevents complicatoins in others; but it is not a cure-all. When it is used, keep on with the old tricks you have always used in gonorrhea.

DR. CHARLES McMARTIN, (Omaha): I think the Nebraska State Medical Association is to be congratulated on having had such a Symposium this morning. Certainly we have had a wonderful presentation of this subject.

I want to stress the early diagnosis and the early treatment, and continuous treatment. Dr. Tomlinson brought this out, particularly in work on primary and secondary syphilis. Particularly in primary syphilis if it is diagnosed early and your treatment is efficacious and kept up, you will not have occasion for much treatment of neuro- or cardiovascular syphilis.

The old method of treatment with rest periods is taboo. The patient can rest, but the spirochete won't rest. I think the old teaching prevails, not only in this state but all over the country. We must keep up vigorous, continuous treatment of this disease.

I enjoyed Dr. Bennett's paper and was particularly interested in his advocating early spinal fluid examination. That is another thing which is neglected. If we are going to eradicate syphilis, it is up to the men in general practice and the family physicians to see we have early diagnosis and early and continuous treatment of this disease.

I want to say one more word about the dosage of sulfanilamide. We found at first, using it in large doses, many could not tolerate it after the first few days, particularly the ambulatory patients. By cutting down and giving not more than 40 grains daily, we found out our clinical results were nearly as good as with large doses, and we could keep our patients at work. I think more and more men are beginning to cut down on the dosage of sulfanilamide.

I am sure it should not be dispensed over the drug counter. It should be put on physician's prescription only, and a non-refillable prescription. We have seen severe reactions where it was given indiscriminately in large doses.

DR. O. W. FRENCH, (Page): How long do you keep these patients in hot baths?

DR. BEVERLY A. FINKLE, (Lincoln): The patients leave town, and then come back to your own city and you know they are not under treatment. Whose place is it to report it?

I want to ask Dr. Zimmerer what is the idea of taking the blood Wassermann only in pregnant women? Why not of every one?

I want to ask Dr. Dennie to give us more detail information about his hydrotherapy.

DR. BEVERLY A. FINKLE, (Lincoln): If I understood him, he gave just one injection of 5 per cent solution of neosilvol. Do they take it just before retiring at night?

DR. M. H. CARRIG, (Bloomfield): I came in late and heard just the last part of this discussion. Some one said a persistently positive Wassermann was a sign of good resistance. I wonder what length of time you consider that positive Wassermann to be a sign of resistance—if she has been under treatment for six months and still runs a 4 plus? As nearly as I could get information, this patient has had it six years. For six months she has had continuous treatment, and I can not get any reversal. I wonder what result heat would have on that type of individual?

DR. H. W. BENSON, (Oakland): What legal support has the profession from the Public Health Service and the Legal Department of the state—the attorney general—in the enforcement of some of these recommendations that have been made? We see a case and it slips away from us. How can we enforce treatment of such a patient legally? We had a case carried to the Supreme Court of Nebraska in which we defended the duty of protecting the public health by informing the keeper of the rooming house where the patient was staying. The patient sued the doctor, and we carried it to the Supreme Court. Is the state giving the profession at large support, or can it, in enforcing these desired objectives in cases of syphilis?

DR. WESLEY JONES, (Omaha): I should like to ask if those cases in which you have skin rash respond to the treatment of sulfanilamide as well as those without the skin rash?

DR. BENNETT, (closing): I think we should mention some fundamental experimental work that is the basis for artificial fever therapy. Ten years ago, Bessemans demonstrated that any type of heat, induced in animals and later in patients, would destroy spirocheta of local lesions and that temperatures of 105 and 106 degrees also markedly inhibited spirochetial growth in systemic lesions. It does not matter what kind of heat is used. The common denominator is increased heat within the body.

Again I would emphasize it is a matter of the doctor and the nurse giving the treatment, rather than the method of fever induction. It seems to me out of all this we might get some place with a combination fever and chemotherapy that may shorten the total treatment time of syphilis in any stage, which is needed if we are to eradicate the disease; because patients get out of hand before you can bring about a cure. I firmly believe we will see some method evolved that will cut the total treatment time by approximately one-half. I wish to re-emphasize the importance of spinal punctures, because the average doctor is loath to do them. Most of us have been guilty of using too large needles and leaving patients with post-lumbar headache. If we use 22-gauge needles, we can get away with it.

I did not get the question about the Wassermann case with reference to immunity. I firmly believe a large per cent of so-called "Wassermann fast patients" are neurosyphilis cases. If they won't respond under chemotherapy, they should be given fever therapy of some type.

DR. McMARTIN, (closing): Answering Dr. Jones as to whether those patients who develop a skin rash respond better to the sulfanilamide, I do not know. I have no statistics on them. Some who developed a skin rash were getting good results. Some developed a rash so soon I was not able to tell. One went to Kansas City by automobile a day after I started him on sulfanilamide. He developed a rash over the forearm and hand which was exposed to the sun. I have not used the Elliott treatment. I treat the male only.

Answering Dr. Finkle's question, I prescribe an injection of neosilvol at night before retiring. The drug stays in all night long. With ambulatory patients it is difficult to give injections when they are working because they must take a bottle and syringe with them. I do not get better results if I prescribe more than one injection a day.

I want to thank all of you for the excellent discussion.

DR. ZIMMERER, (closing): Mr. Chairman: I thank Dr. Cameron for his remarks, which were very kindly. By way of explanation, let me say we are just beginning this work. This has been our first year. During part of the year, the nurse in charge has been away persuing educational work in the University of Pennsylvania. While our figures are not large, they show what we are trying to do. Another reason our figures are small is because we have not had sufficient call. Perhaps next year we can make a better showing.

Dr. Finkle asks what can be done in the way of reporting a patient. The patient should be reported two weeks after he stops treatment with you. We will endeavor to trace the patient and find if he is under treatment in another place. The patients may change doctors as often as they like, but we must be notified when changing address and when they stop treatment.

A doctor asked in regard to the possibility of compelling patients to take treatment. The infectious patient can be required to take treatment. The local board of health has ample authority under the rules and regulations to issue a health warrant and quarantine the infectious case. The non-infectious patient can not be compelled to remain under treatment.

I am grateful to you for your discussion.

DR. TOMLINSON, (closing): I want to compliment Dr. Zimmerer on his ideal schedule. I am glad he left to the last the matter of this propaganda we have been putting out to the lay people. That is where it belongs.

Much more benefit will come through more accurate early diagnosis, the use of improved methods of treatment, and better follow-up work.

Modern therapy provides for continuous treatment rather than interrupted treatment, as was so well emphasized by Dr. McMartin. Regarding spinal fluid examination, let us not forget that involvement of the central nervous system takes place early in the course of the disease. If there is clinical evidence of central nervous system involvement, a fluid examination should be made forthwith. In the absence of clinical evidence of neurosyphilis, I believe it should be done as soon as the blood Wassermann becomes negative.

We must not misinterpret recommendations of the Cooperative Clinical group, which provide for at least 20 doses of an arsenical and 40 doses of heavy metal. These amounts may be sufficient in some cases and in others quite insufficient—so we must not decide the job is done in all cases with the completion of these amounts of treatment.

Answering Dr. Benson's question, I believe it is a mistake to inform anyone but the patient regarding a diagnosis of syphilis, unless he directs (preferably in writing) that someone else be informed.

DR. DENNIE, (closing): The technique of the hot bath is as follows: The patient is placed in water at 98 degrees Fahrenheit. On the first day raise the temperature of the water to 104 degrees; the following day start at 100 degrees and raise the temperature of the water to 108 degrees. The third day start at 100 degrees and raise the temperature of the water to 112 degrees. When the temperature of the water is raised rapidly to 112 degrees, a temperature of 104 degrees to 106 degrees is obtained within fifteen to twenty minutes, in most cases. Some patients are heat resistant. We endeavor to maintain a temperature of 105 degrees for twenty minutes or more. The patient is then taken out, wrapped in blankets and allowed to sweat it out.

There is no particular advantage to heat therapy by hot water methods, except that it can be more universally used. I think you will agree that heat plays an important part in the treatment of syphilis. I am not speaking of the treatment of neurosyphilis, but early somatic syphilis. If heat is used in early syphilis, it must be more universally used than it is at the present time. While heat cabinets will produce temperatures more efficiently, they are not available to the great majority of syphilitics. We must make heat available to more of our patients. Any doctor can learn the technique of heat treatment and a good nurse can give it in small towns and rural communities.

For many years better results were secured at Hot Springs than any other place. The reason was that they employed the principle of heat for raising the immunity of the body. When one raises the immunity of an individual, he makes the subsequent treatment twice as effective.

As to the persistent positive Wassermann reaction, the doctor misunderstood me. If an individual has active manifestations of syphilis and a negative Wassermann reaction, he is in bad shape. If one can increase his immunity by the use of heat, the negative Wassermann reaction will be reversed to a positive reaction in 25 per cent of the cases. An individual with a positive Wassermann reaction and early syphilis has a better chance than an individual with a negative Wassermann reaction and positive syphilis.

Heat therapy does not have as much influence upon the serological reaction of the blood as upon the spinal fluid. With heat therapy it is easier to reverse the serological reactions in the central nervous system than in the somatic system. A lumbar puncture should be done early in all cases of syphilis. It is the greatest diagnostic procedure one can do for any patient. If the patient in later years has an involvement of the central nervous system, the involvement of that system has taken place early in the course of his syphilis. If the condition of the cerebrospinal fluid is known, more treatment will be given over a longer period and heat will be used advantageously. If a well treated case of syphilis still has a persistent positive Wassermann reaction but a negative spinal fluid reaction, the problem does not present so many difficulties. After having given adequate treatment in such cases, it is better to treat them twice a year with both courses of treatment, ranging from 6 weeks to 2 months. This can be done for the rest of the patient's life without injury to him and with a fair assurance that he will not develop further manifestations of syphilis. Heat has but little influence in reversing a positive reaction to a negative one.

FEVER THERAPY IN THE TREATMENT OF GONORRHEA*

C. A. OWENS, M. D.,
Omaha.

There can no longer be any doubt that artificially induced fever is specific for the control of gonococcic disease. Since the advent of this type of therapy as a routine in certain clinics, there has been a reawakening of interest in the disease itself due to the fact that clinical results are demonstrating the accuracy of scientific laboratory studies regarding the thermal death time of the gonococcus. Now, for the first time in this treacherous disease, the application of a rational therapy is being followed so promptly and so consistently by symptomatic relief and cure that a prognosis can be given with some degree of accuracy and without hesitation. Research has been stimulated to a still more intensive examination of the gonococcus itself. The multiplicity of strains has been conclusively demonstrated and more practical methods of routine culture have been discovered. Formerly patients with gonorrhea have fallen into two principal groups—those that got well rather promptly with little or no inconvenience and little or no treatment, and those that were of long and complicated duration regardless of type of management. The first or fortunate group includes those patients who furnish the good results reported in the literature for multitudinous kinds of gonorrheal therapy, cases in which credit deserved by nature was misappropriated to some favored type of treatment. Some authorities estimate this group to include not less than 60% of all cases. The second great group of less fortunate people furnished the disappointments we have all experienced as we have tried out the various remedies advocated from time to time. Artificial fever has brought new experience in the management of this difficult group. It has given immediate relief of symptoms regardless of type and severity, and in many cases, complete cures in the short space of two weeks.

It is difficult to report the value of a therapeutic measure without inclining toward enthusiasm or toward adverse criticism. I do not believe there is any necessity for restraint of enthusiasm for this procedure. The method has its own impractical features working against its very popular application regardless of the attitude of its critics. A temperature approaching close to 107°F must be maintained for 6 hours or longer. These two conditions—high temperature and prolonged time of maintenance—are essential. A high temperature for a short time is no better than the protein shock therapy now part of the past, and a lower temperature for a greater length of time fails to provide the thermal death conditions that are now accurately determined for the gonococcus. To supply the necessary physical conditions there must be dependable mechanical equipment in charge of a highly trained and experienced personnel. The work simply can not be done safely in an office or by an occasional operator. The procedure should merit the same degree of respect as a major surgical attack and failure to accept this truth will result in occasional deaths with consequent damages to the reputation of the careful and conscientious ones who are trying to give the public the benefits of a scientific discovery that is highly practical if properly handled. At the inception of any new idea in treatment in which merit is easily demonstrated, there comes a wave of enthusiasm entirely unwarranted by the facts. Next comes the reaction and a condemnation which is likely to be just as sudden and severe as the preceding acclamation was wide and noisy. If the idea in question has value, the fact will finally be demonstrated in its true light when the enthusiastic have had a few stabilizing disappointments and the pessimists have seen enough happy results. As witness to this emotionalism in medicine, I cite the experience of the operation of nephropexy, and I believe we are about to see a similar reaction as regards prostatic resection. Our aim then should be to remain as coldy scientific as possible while we watch the clinical application of an idea that has come from the laboratory concerning the vulnerability of the gonococcus when properly heated.

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*Read before the Omaha-Midwest Clinical Society, October 18, 1937.

I will refer you to previous articles for such details of passing interest as who has or who hasn't noticed the coincidence of improvement occuring in gonococcic disease when the patient happened to contract a synchronous febrile disease. Likewise the details of treatment and management have been described at length elsewhere. I will demonstrate the method by means of a motion picture of the Kettering Hypertherm in operation and proceed to a summation of our results in treating 172 cases of gonorrhea.

There is no universally recognized criterion for cure of this disease. In the following report we have based an opinion of cure on the fact that all clinical signs have vanished. There is no urethral discharge at any time, the urine is clear and without shreds, the prostate is of normal consistency, and the expressed secretion is free from leucocytes. In the cases of women, besides the lack of discharge or any visible evidence of cervical irritation, bimanual examination no longer reveals any tubal thickening or tenderness. If all these conditions are fulfilled at the same time, gonococci can hardly be expected to be present. We have not relied on cultures made from excretions because we have not yet complete facilities for dependable culturing of the gonococcus. Furthermore I would not attach any importance to the report that no gonococcus was grown from a prostatic secretion if leucocytes were still present. That would be like reporting no needle in the hay stack simply because no needle was found. We have always been reserved about telling any patient he or she is cured, feeling that the greater the time elapsing under normal living conditions following the attainment of presumptive cure, the greater the probability of actual cure.

Number Presented for Treatment	172
Number Completing Treatment	94 or 55%
Number Discontinuing Treatment	78 or 45%
Of the 94 who carried on:	
Cured	78 or 82.9%
Not cured	16 or 17.0%

WHY THE 78 OR 45% DISCONTINUED

A total of 26, or 15%, stopped treatment for good reasons as follows:

Cardiac insufficiency	4
Emotional instability	10
Tendency of skin to burn	9
Severe anemia	1
Severe reaction, collapse, etc	2

A total of 52 refused because of dislike showing that the treatment was "too much" for the will power of 30% of the patients who tried it.

RESULTS THROUGH THE ENTIRE SERIES

Acute Urethritis—45 Cases.			
Cured	24 with av. of	2.9 treat. of	5.4 hr. each.
Improved	21 with av. of	3. treat. of	5. hr. each.
Chronic Urethritis with Prostatitis—93 Cases.			
Cured	57 with av. of	4.3 treat. of	5. hr. each.
Improved	36 with av. of	2.6 treat. of	4.8 hr. each.
Salpingitis—21 Cases.			
Cured	14 with av. of	4.3 treat. of	5. hr. each.
Improved	7 with av. of	3.1 treat. of	5.3 hr. each.
Gonococcic Arthritis—30 Cases.			
Cured	21 with av. of	4.2 treat. of	4.9 hr. each.
Improved	9 with av. of	2.8 treat. of	5. hr. each.

CONCLUSIONS

1. Certain strains of the gonococcus may be readily exterminated by temperatures of a degree and duration that may be endured by the patient.

2. Such strains are a majority of those encountered clinically as demonstrated by the fact that 82% of patients submitting to treatment were cured.

3. Fever therapy for gonorrhea is not intensely popular from the patient's standpoint since fully 30% refuse to continue after an introduction.

4. Fever therapy offers the quickest and most dependable method of affecting a cure of gonococcic disease.

5. It falls short of being perfect because of some resistant strains of the organism, and because to some patients it is intolerably severe.

LAST REQUEST

The doctor stood by the bedside, and looked gravely down at the sick man.

"I can not hide from you the fact that you are very ill," he said. "Is there any one you would like to see?"

"Yes," said the sufferer faintly.

"Who is it?"

"Another doctor."

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EDITORIAL

ACUTE ANTERIOR POLIOMYELITIS—A PERENNIAL DILEMMA

Poliomyelitis is a vexing perennial problem. It becomes particularly lively at this time of the year when because of its seasonal charactertistics every physician becomes "polio" conscious. For years this dread disease has baffled clinician and laboratory worker alike. Now and then a ray of new hope trickles through in the form of a promising method for prevention or specific therapy. It is only natural that any process or procedure which offers the least bit of encouragement should be welcomed by the public and the profession as an improvement over present meager facilities for care of those afflicted with acute poliomyelitis.

Thus within recent years we have had occasion to put to trial serums and vaccines at the recommendation of some of our outstanding investigators. None proved effective. The convalescent serum treatment has proved beneficial in some cases where the condition was diagnosed in the preparalytic stage, but according to most clinicians its effectiveness following the onset of paralysis remains open to question. Its use is mainly a recourse, and a justifiable one, in absence of anything more specific. It has the further advantage in that its lack of universal approval does not constitute a contra-indication to its use. It does no harm.

With the "prophylactic" procedure where chemical agents are utilized we find a different situation. We refer particularly to the zinc spray advocated by scientific investigators as a possibility worthy of study and immediately grasped by popular writers as an unquestionable panacea. In a late number of the Journal of Pediatrics, Tisdall, Brown and Defries(1) report that in a group of 4,713 children which had been sprayed by experts and subsequently studied with reference to the effects of the spray, "only" 25% showed anosmia. In most of these cases, it is true, the loss of smell was only temporary. These writers, however, conclude, "The persistent disturbance of the sense of smell and taste in certain individuals, after a period of six months, is difficult to explain on the basis of a persisting inflammation of the olfactory mucous membrane causing a mechanical blocking of the olfactory area. A study of the changes of the olfactory mucous membrane in rats, following the instillation of zinc sulfate suggests that the effect of 1% zinc sulfate on the human being should be carefully studied to determine if the persisting disturbance of smell and taste may be due to injury of the olfactory area."

This study does not necessarily and entirely discredit the procedure. Scientific attainments usally result from trial and error and the ultimate good is, as a rule, quite worthy of the effort. At present, however, the procedure is obviously not free from danger. We wish to point out particularly the evils of premature popularization of medical thought. The spray was described in detail in a lay magazine by De Kruif. Following the publication of this article, many parents throughout the land insisted that their children be sprayed. How many of them remained handicapped will probably never be known.

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(1) Persistent Anosmia Following Zinc Sulfate Nasal Spraying: Journal of Pediatrics, Vol. 13, p. 60, July 1938.

"THE GOVERNMENT HAS THE MONEY"

At the Annual Assembly of the American Medical Association the House of Delegates again declared itself against governmental schemes as "aids" to private medical practice. Following this announcement there appeared in the public press the statement by a prominent member of the Association to the effect that "a revolt" is again being contemplated. This time the threat is made to break away from the "stand-pat" A.M.A., and start a new organization with a "more constructive program for medical care." That all physicians have a right to their opinions, no one will dispute. It is, however, a travesty on the greatness of these prominent men who insist on forcing the issue in spite of majority opposition by the rank and file of the doctors in active practice.

The government must step in and pitch, according to the alleged spokesman of the "insurgents," because "the government is the only agency capable of doing the job thoroughly. The government has the money."

We confess a certain timidity in arguing with such a distinguished body of medical "leaders" as the disappointed group constitutes. For, be it known, most of them are men of no picayunish medical rank. The large majority hold important teaching positions; many occupy chairs in eastern medical schools. The leaders of these leaders, as well as most of the leaders who are also followers, are full-time faculty members in some of the greatest institutions of the United States. In our own humble way of looking at the situation, in spite of repeated efforts to fix the issue clearly in mind, we are still undetermined as to the justification of the threatened break. Perhaps it is because we cannot get ourselves to believe that prominent men of science, such as this group represents, saturated with an eagerness for truth, would yield to reports gathered from hearsay and start such a serious rumpus in organized medicine without the effort to go at it on the basis of facts.

For one thing, we may be unreasonable, academic, sophomoric, or whatnot, but before we go in for any earnest fighting in, or breaking away from, the A.M.A., we should like to know the extent to which people actually suffer from want of medical care. We would not care to base our ideas on impressions of sentimental social workers. Actually, though admittedly from limited observation of local conditions, it would be exceedingly difficult to make a case out of neglect in matters of *necessary* medical care. Luxury care is another matter. But we do not wish to be facetious and prove guilty of arguing on the basis of mere impressions. Our observation is, however, pertinent to the discussion. With the thousands of free clinics throughout every city and village in our land, it is feasible to suspect that the lack of facilities for necessary medical service is more a theory than an actuality. Here again it would be better to wait patiently for the results of the study presently under way by the A.M.A. than to go off angrily and threateningly.

We do not object to being paid for the care of the indigent. In principle we even believe that it is wrong for the public to expect us to go on indefinitely with our donation of millions of dollars every year to the care of the poor. Yet we somehow lost our belief in Santa Claus. The government financed in a way the ill-fated FERA several years ago. We still remember the blanks that accompanied each $1.50 house-call. Dr. Hugh Cabot, we take it, did not participate in the setup. Nor did any of the rest of the men who are so anxious for the federal government to participate in medical practice and medical research.—*From The Bulletin of the Omaha-Douglas County Medical Society.*

ANNOUNCEMENTS

OMAHA MIDWEST CLINICAL SOCIETY

Fall sessions are announced for October 24-25-26-27-28. Full plans are now completed for the coming season. A list of distinguished guests thus far includes: Medicine—Dr. Henry L. Bockus, Philadelphia, Pa.; Gynecology and Obstetrics—Dr. Robert T. Frank, New York, N. Y.; Surgery—Dr. Cameron Haight, Ann Arbor, Mich.; Surgery—Dr. Louis J. Hirschman, Detroit, Mich.; Radiology—Dr. Edward L. Jenkinson, Chicago, Ill.; Neurology—Dr. Foster Kennedy, New York, N. Y.; Otolaryngology—Dr. Gordon B. New, Rochester, Minn.; Dermatology—Dr. Oliver S. Ormsby, Chicago, Ill.; Medicine—Dr O. H. Perry Pepper, Philadelphia, Pa.; Pediatrics—Dr. Heyworth N. Sanford, Chicago, Ill.; Orthopedic Surgery—Dr. A. R. Shands, Jr., Wilmington, Del.

An unusual feature this year will be a symposium on anesthesia in which the following will take part: Dr. John S. Lundy, Rochester, Minn.; Dr. Kenneth C. McCarthy, Toledo, Ohio; Dr. A. Ross McIntyre, Omaha, Nebr.; Dr. John A. Moffitt, Oklahoma City, Okla.; Dr. Ralph M. Waters, Madison, Wis.

The officers of this society urge that physicians make their plans now to attend the fall clinics this year.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The next written examination and review of case histories of Group B applicants by the American Board of Obstetrics and Gynecology, will be held in various cities of the United States and Canada on Saturday, November 5, 1938. Last date for applying is Sept. 5.

The next general examination for all candidates (Groups A and B) will be held in St. Louis, Missouri, in June, 1939, immediately prior to the American Medical Association meeting.

Application blanks and booklets of information may be obtained from Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburg (6), Pennsylvania. Applications for these examinations must be filed in the Secretary's Office not later than sixty days prior to the scheduled dates of examination.

GOITER CONFERENCE

The Third International Goiter Conference will meet in Washington, D. C., U. S. A., September 12 to 14, 1938, with headquarters in the Mayflower hotel.

The scientific sessions are open to members of the medical and allied professions who are in good standing.

All meetings are to be held in the Ball Room of the Mayflower Hotel.

THE AMERICAN COLLEGE OF PHYSICIANS will meet in New Orleans, La., March 27-31, 1939

The Twenty-third Annual Session of the American College of Physicians will be held in New Orleans, with general headquarters at the Municipal Auditorium, March 27-31, 1939.

Dr. William J. Kerr of San Francisco is President of the College and will have charge of the program of general scientific sessions. Dr. John H. Musser of New Orleans has been appointed General Chairman of the Session, and will be in charge of the program of clinics and demonstrations in the hospitals and medical schools and of the program of round table discussions to be conducted at the headquarters.

The Second National Assembly of the International College of Surgeons will be held in Philadelphia, Pennsylvania, with the headquarters at the Bellevue Stratford Hotel on October 13 and 14, 1938.

All members of the medical profession of good standing are cordially invited to attend the Scientific program and various clinics. There will be no registration fee.

Exercise develops skills and coordinations which enable the different parts of the body to cooperate and synchronize better.

NEWS AND VIEWS

President-elect A. L. Miller is a candidate for State Senator from the 43rd district.

The State Health Department has available 75 incubators to be utilized by physicians in the care of premature deliveries. Dr. P. H. Bartholomew, of the Department will be glad to furnish further information.

According to the Long Pine "Journal" the community, now without a doctor, may soon boast of a physician and a hospital. A group of citizens realizing their handicap are making a conscientious effort to raise funds for the purpose of making Long Pine an attractive place for a competent physician.

Dr. A. W. Anderson was elected president of the Lexington Rotary Club in June.

Dr. A. H. Hostetter of Douglas was recently honored by his Community for fifty years' service in Hendricks precinct.

Dr. C. W. Doty and wife of Beaver Crossing were given a public reception by the people of their community in recognition of the fact that Dr. Doty has completed fifty years in the practice of medicine.

Dr. Olga Stastny of Omaha has been included in those listed in "Principal Women of America," a book published in London. The book contains biographies of two thousand distinguished women of United States and Canada.

The Iowa State Centennial Exposition to be held from August 17 to September 15, in Council Bluffs, is planning an elaborate health and medical exhibit.

The attorney general's office ruled June 21 that a physician cannot recover fees for medical services to relief clients in counties which have county physicians "able and willing to serve."

Assistant Attorney General Edwin Vail wrote the opinion in reply to County Attorney William Keeshan of Albion who inquired concerning the status of bills presented by a physician for services to old age assistance recipients, WPA workers and farm security administration clients.

Bob Mossholder, chairman of the junior chamber of commerce health committee, reported Friday that 29 Lincoln firms and 1,828 employes had co-operated in the anti-syphilis campaign concluded July 18.

The six months' campaign, that was instituted after considerable public interest was shown in the subject at a National Hygiene day meeting held in February, was confined to the larger concerns in the city.

The committee pointed out that considerable opposition to the campaign was experienced, and many employers were reluctant to participate.

The group suggested that the junior chamber seek enactment of two laws: make it imperative for every expectant mother to take a blood test for syphilis; demand that every person about to be married, both men and women, be given similar examinations.

Representatives of the Lancaster County Medical society who aided in the work were Dr. L. J. Owen, Dr. Bruce Palmer and Dr. George Misko.

REPORT OF STATE-WIDE SURVEY OF PUBLIC HEALTH ACTIVITIES IN NEBRASKA*

At the request of the Nebraska State Medical Society and of the Director of Health of the (State) Health Department, the Surgeon General of the United States Public Health Service assigned an officer to duty with this state effective September 1, 1937.

After a conference with members of the State Society together with the Director of Health, it was determined that a county-by-county survey should be made in order to obtain first-hand information concerning public health activities now being carried out in each county.

As time, personnel, and travel facilities would not permit of a visit to each town, hamlet, and school throughout the state, it was decided that a visit should be made to every county seat and all available sources of information in these towns utilized for the above purposes. The actual survey was begun September 21, 1937. For questionnaire used see appendix.

In each county the following officials were visited:

1. County clerk for the purpose of securing data concerning (a) The assessed valuation of the county. (b) Rate of taxation. (c) Amounts expended by the county during a twelve month period for public health service. (d) The amounts expended for medical relief, that is for doctor's fees, nurse's fees, hospital fees, and drug cost for county indigents.

2. The county treasurer was next seen for the purpose of determining the total taxes collected by the county during a twelve month period, this figure to be used as a basis for determining per cent of moneys being spent for public health and relief purposes.

3. The superintendent of public instruction for a discussion of the immunization programs for school and preschool children, information as to the type of physical examination made on school children, and follow-up work done, by whom done, etc. Incidence of venereal and other infectious diseases were discussed at this time as were programs for health education in the school.

4. The superintendent of city schools was also visited at each county seat and the same subject matter discussed with him as with the county superintendent.

5. The director of relief for each county was seen next and questions asked concerning the methods of handling the medical relief load, amounts paid for various services, number of obstetrical patients, venereal disease cases, cases of tuberculosis cared for by the county, etc.

6. Whenever possible, physicians on the various county and city boards of health were visited in their offices and information requested as to the incidence of various reportable diseases in the vicinity, as well as any public health program being considered or carried out by these officials.

7. School physicians and nurses were seen whenever possible and school immunization and health programs discussed with them.

8. In addition, other physicians in the town were visited when time permitted or when they could be found in their offices.

The information secured through the routine mentioned above was very incomplete in some of the more rural counties, while in at least some of the more populous counties a true picture of the health programs could not be determined for the reason that the county seats unfortunately are located in smaller towns, and definite information concerning health activities in the larger towns in the same county were not available at the county seat. One notable example is Madison county with the county seat in the small town of Madison and with Norfolk, a city of some 11,000 people, located about sixteen miles distant. The information secured as a whole, however, is believed to represent fairly accurately the present health status of the state.

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*The study here reported is for the information of our members. It carries no official opinion of the Nebraska State Medical Association. (Editor).

For a summary of findings in each county refer to Table No. 1. Table No. 1 lists the counties of the state alphabetically, gives date each county was visited, valuation (assessed value), population as of 1930, per capita wealth, rate of taxation, state, county (total). This does not include special levies for towns, villages, and districts in each county.

Total Collections.—These figures in most instances represent all moneys collected through county treasurer's office during a twelve month period but in a few cases represent tax collections only.

Amounts Expended by County for Public Health.—This includes salaries of doctors and nurses employed by various school boards for physical examination, immunization, health education of school children, and moneys expended for venereal disease control, tuberculosis control, and for control of other infectious diseases.

Per Cent of Tax Money Expended for Public Health.—This figure is arrived at through dividing the amounts of money expended for public health by the amounts reported as total collections by the various county treasurers. These, it will be noted, are extremely low varying from nothing in many counties to .43 per cent in Adams county. This does not take into consideration Lancaster county and Lincoln or Douglas county and Omaha which will be considered separately.

The amounts Expended for Medical Care to the Indigent, Per Cent of Tax Money used for this purpose, and the Per Capita Cost of same will be found listed in the next three columns. These expenditures are listed in order to show the comparison of the amounts expended for remedial work as against the amounts expended for public health (preventative medicine). A larger expenditure for preventative medicine should greatly diminish the necessary expenditure for remedial medicine.

Amounts Expended by Red Cross.—The next column shows expenditures made by the various Red Cross chapters to the counties. This money was used chiefly in school work.

The next column shows donations and moneys expended by other outside agencies such as P. T. A.'s, Kiwanis, Elks, and other fraternal organizations and includes part of seal sale funds expended chiefly for remedial work as dentistry, tonsillectomies, glasses, etc., for indigent school children. The last column shows the per capita expenditure for public health.

It can readily be seen from the table that very little public health work is now being carried out in Nebraska. This fact is difficult to understand when the wealth of the state is taken into consideration. The per capita wealth of the state as a whole is much above the average and several times greater than that of many states supporting full-time county and district health units.

Table No. 2 shows the per capita wealth of the various counties in the state, as determined from assessor's valuation, and varies from $3.237 per capita in Grant to a low of $880 for for Scotts Bluff county. Thirteen counties have valuations in excess of $2,000, eight counties per capita wealth is given between $1,900 and $2,000, eleven counties between $1,800 and $1,900, ten counties between $1,700 and $1,800, seven counties between $1,600 and $1,700, and five counties between $1,500 and $1,600, or a total of fifty-four counties with a valuation in excess of $1,500. In seven counties the per capita valuation is between $1,400 and $1,500, in eleven counties between $1,300 and $1,400, and in seven counties between $1,200 and $1,300, in nine counties between $1,100 and $1,200, while in four counties the valuation is between $1,000 and $1,100.

Only one county, Scotts Bluff, has a valuation under $1,000 per capita. It would seem from the above table that every county in the state is financially able to participate in the establishment and maintenance of a full-time county or district health unit. At the present time, through law, each county in the state has a board of health consisting of the sheriff as chairman and quarantine officer, the superintendent of public instruction as secretary and reporting official, and a physician (if one is available) as medical advisor. In addition, every incorporated village has its own board of health consisting of the following members: chairman of the village board of trustees, chairman; the town marshal who acts as secretary and reporting officer and quarantine officer; and a third member who is a physician, if a physician is permanently residing in the village.

Cities of the first-class boards of health consist of: mayor, chairman; physician, medical advisor; chief of police, secretary and quarantine officer; the president of the city council, and one other member. Cities of the second class: mayor, chairman; physician, medical advisor; president of city council; marshal, secretary and quarantine officer. Each board of health, and there may be several in a single county, is required by law to make rules and regulations to protect the public against communicable diseases, nuisances, etc., provided that such rules and regulations do not conflict with the rules and regulations of the (State) Department of Health. With such a multiplicity of health boards and reporting agencies, most of whose members are untrained in public health and sanitation, is there any wonder that there is a noticeable lack of reporting of infectious diseases and negligence in attending to sanitation in a number of the counties?

It is manifestly impossible to secure the best results in public health administration with setups as described above. Therefore, it seems necessary that the establishment of full-time health units in Nebraska must await legislation which will permit and delegate the administration of health matters, the control of infectious diseases, the reporting of same to the (State) Health Department, and the supervision of sanitation, milk and food inspection service, etc., to full-time county or district health units, the establishment of which would permit of the discontinuance of the present boards of health in those counties or districts desiring and participating in the estblishment of full-time health units.

In discussions with county officials, physicians, and other interested individuals the following argument is often presented as a reason why the establishment of full-time health units is inadvisable at this time:

Nebraska during the past four or five years has suffered from drought conditions which has diminished the income in some sections to the extent that it is difficult to secure sufficient funds for the maintenance of already established local government agencies, and that many individuals are actually dependent on county or state relief agencies for commodities as well as necessary medical attention.

The obvious answer to this argument is that in times of depression, the population as a whole is much more dependent on the county for public health services than in normal times when they are able individually in a majority of cases to pay for medical attention and for preventive measures such as immunization of school children, etc., and that to provide health services, even though this may necessitate curtailing some other activity to some extent, is a paying investment in the long run, since money spent for preventive medicine should greatly lessen the incidence of preventable diseases and the invalidism caused through them, thus saving the county the moneys now being expended for the hospitalization and care of such cases.

Physicians in some communities apparently confuse public health (preventive medicine) with the practice of medicine and oppose the establishment of health units on the grounds that this is actually state medicine and will hurt their private practice. These doctors have not considered or do not realize the tremendous amount of aid a well-organized health unit can be to them in their private practice in providing prenatal and postnatal educational services for them, in seeing that expectant mothers report to them at regular intervals and bring specimens of urine in at frequent intervals for analysis, etc., in urging venereal cases to report regularly for treatment, in doing case work, locating contacts and sources of the disease, and bringing them under treatment, in arranging immunization clinics for them, in educational work in tuberculosis especially in isolation of patient and protection of contacts, and in a hundred other ways that need not be mentioned here.

It is felt that one of the greatest needs at present in the state of Nebraska is health education, not only for the laity, but for physicians as well. The establishment of a division of health education in the (State) Department of Health, with a well-trained, full-time, medical director in charge should go far towards giving the laity and the medical profession a proper insight in their health needs and responsibilities.

In Table No. 3 the counties of the state are arranged in order of population. Valuation, per capita wealth, and tax rate are also stated. It will be seen that in addition to Douglas county and Lancaster county, nine other counties have populations in excess of 24,000 and the per capita wealth and tax rate such that each, with the probable exception of Scotts Bluff, should be financially able to support a county health unit on a participating basis (county funds at least 50 per cent.) However, a study of the geographical location of each shows that it is probably preferable in all, except one or two cases, to include other adjoining sparsely settled counties in each unit, otherwise the smaller counties would alone be unable to provide for adequate health service.

Douglas and Lancaster counties each, it is believed, should maintain separate units which should include Omaha and Lincoln respectively in their jurisdiction. Because of the sparse population in the northern tier of counties, districts in this part of the state of necessity will have to be very large and will be difficult to administer because of lack of good roads, other than the two or three improved highways in this section.

In districting the remaining counties of the state much thought should be given to placing the units in centrally located towns, from which all parts of the district can be easily reached by automobiles. Whenever possible, headquarters should be located in the larger towns as these are usually the shopping and supply center for large sections of the country and would permit many people from the outlying districts to avail themselves of the facilities of the health unit for conferences and aid on sanitation and health matters.

The personnel of each unit should consist of a minimum of at least one medical director, one nurse for each county included in the unit, one sanitation officer, one secretary. The medical director should be a graduate of a class A medical school, should not be over thirty-five years of age at time of appointment, and should have had at least one year's training in an approved school of public health, in addition to not less than three years of private practice, or two years as interne or resident in an accredited hospital before assuming the duties of the office. Each nurse should be a graduate of an accredited school of nursing and, in addition to private duty or institutional nursing, should have had a special course in public health at one of the accredited schools before entering on duty with the unit.

The sanitation officer should have completed a course in public health now given sanitation officers in some of our leading universities before being assigned to duty.

The secretary should be a good typist and should have some knowledge of bookkeeping and filing. Of necessity in most cases she will have to learn by experience the special duties required of her in the health office.

SUMMARY

The survey shows that only one city, Lincoln, and no county at present is maintaining a health department under the supervision of a full-time health officer. It is true, two demonstration district health units under the direction of full-time health officers, one at Gering, Scotts Bluff county, which operates in three counties, Scotts Bluff, Banner and Morrill, and the other at North Platte serving Lincoln, Keith and Perkins counties have been in operation for more than a year. Both of these units seem to be functioning satisfactorily and are providing valuable services. Since to date, however, there has been no participation or support from county funds, the work done by these units cannot be included in the health activities listed as being carried out by these counties. It is believed that the continuance of these units should depend upon future participation of the counties benefited.

In addition to the units mentioned, another demonstration unit has recently been organized and is now functioning in Richardson and Pawnee counties.

Two specialized demonstration units are also functioning in the state, one in Boyd and the other in Dundy counties. These specialize in Maternal and Child Health activities and have been providing valuable services, not only to these communities as a whole, but to the practicing physicians as well. Both units are manned by nurses under the direction of the Maternal and Child Health Division of the (State) Health Department.

Outside of the two metropolitan centers, no public venereal disease clinics are in operation in the state. A limited number of venereal disease cases are treated at public expense through county relief agencies.

A tuberculosis survey has been made in the past two years in York, and Phelps and Dundy counties are now being surveyed. Buffalo county has also made an appropriation for this purpose.

Except in the counties served by the two demonstration health units and Nemaha county where Red Cross and Kiwanis Club financed diphtheria immunization to 2,900 children and Wheeler county where women's clubs financed diphtheria immunization and vaccinations against smallpox free of charge, very little has been done in the rural sections of the state toward providing immunization against these two diseases.

As a result of outbreaks of smallpox and diphtheria, it is true a number of children in some counties have been protected, notable examples having occurred in Deuel and Seward counties, however, without the stimulus of the presence of these diseases in a community, very little immunization has been done as a public health measure. There seems to have been no concerted program for the immunization of rural preschool children and infants.

In some of the cities throughout the state school health programs which include physical examinations, immunizations, etc., of school children and preschool children are carried out. Among these may be mentioned Grand Island, Hastings, Kearney, Holdrege and Fullerton, in addition to the program in Lincoln and the one now being initiated in Omaha.

RECOMMENDATIONS

1. That permissive legislation be enacted en-

abling the counties in the state to establish full-time county or district health units on a participating basis, the county share of which should ultimately be not less than fifty per cent.

2. That permission be granted the counties to levy a tax for health purposes, irrespective of other levies, for the establishment of full-time county health units or for participation in district health units. Upon the basis of the assessed valuations, it is believed that less than one mill levy for health purposes will be sufficient for the immediate future. Local funds thus derived should be used to augment state subsidies to county or district organization for health purposes.

3. That in those districts or counties in which health units are established, the local health boards now functioning be abolished, and in their stead a health council of at least five members appointed for each county health unit. The terms of these appointees should be overlapping. The members of this health council should be appointed by the county commissioners and should, when possible, include two physicians and one dentist. One commissioner should also be appointed to the council. In district units each county participating should be represented by a county health council as described above.

In addition to local county councils, it is recommended that in district health units a health council be created to consist of one representative from each county health council selected by the county councils from their own membership and one or more representatives at large in order to provide an odd number of councillors.

Each county health council, when a county maintains a health unit, or each district council in the case of district health units should be empowered to adopt local regulations not inconsistent with state laws and regulations, and should exercise advisory functions in their local jurisdictions under the general supervision of the county or the district health officer as the case may be.

4. Sufficient funds should be allotted the (State) Department of Health to permit of subsidies to county or district health units large enough to provide the minimum personnel necessary for adequate and efficient local health services. This subsidy eventually should not exceed fifty per cent of the total cost of the units.

5. It is recommended that the minimum personnel of a county health unit be not less than one medical director, one public health nurse, one sanitary engineer or sanitarian, each of whom should be specially trained and qualified, and one secretary. District units in addition to the above personnel should be provided with one or more nurses and sanitarians when necessary for each county in the unit.

6. That in order to further the development of local health service, there be established in the (State) Department of Health a unit of health education employing a full-time person possessing proper training and experience for this duty.

7. The control of tuberculosis being a distinct public health problem, it is recommended that all state tuberculosis activities be transferred to the Department of Health and that adequate funds be provided for the efficient administration of this activity by that Department.

8. It is recommended that the control of milk and milk products be transferred from the Department of Agriculture to the Department of Health. This is deemed advisable since all health authorities recognize that milk is the potential source of many communicable diseases such as typhoid fever, septic sore throat, diphtheria, scarlet fever, undulant fever, etc., all of which are public health problems and, the prevention and control of which, are responsibilities of the Health Department.

9. Meat, shellfish, and food inspection are all considered public health responsibilities as are the sanitation of public buildings, hotels, camps, etc. It is, therefore, recommended that these services be transferred to the (State) Department of Health and provision be made for sufficient funds and trained personnel for the efficient administration of these activities.

10. It is recommended that provision be made for the Department of Health to provide such biologicals as will enhance a sound immunization program throughout the state.

(To be continued in next issue of this Journal).

(STATE) HEALTH DEPARTMENT

At the start of the second fiscal year of the current biennium, public health work has progressed to the maximum facilities permit. This includes expansion of the central administration, closely approaching a minimum standard for a state department of health. The establishment of four type Demonstration District Health Units, located in widely distributed areas, is as follows: Unit No. 1, Banner, Morrill and Scotts Bluff counties; Unit No. 2, Madison, Pierce, Stanton, and Wayne counties; Unit No. 3, Keith, Lincoln and Perkins counties; Unit No. 4, Johnson, Nemaha, Pawnee and Richardson counties.

Each Unit functions in an educational capacity.

Absence of permissive legislation prevents incorporation of a Unit into the local governmental setup. Every effort is exerted to cooperate with the local authorities in placing in effect sound public health measures, "Prevention of Disease and Promotion of Health" being the major slogan. One objective in Nebraska's public health program is by educational methods—"Helping others to help themselves." The application is well shown in the following paragraph extracted from the report of a Unit public health nurse:

"During the month a doctor called me to his office and said, 'I would like to have you look into the refrigeration of this home. I have changed the baby's feeding to cow's milk and I am doubtful of the correctness of the preparation of the formula which I prescribed, and refrigeration in the home.' The home call was made and a demonstration formula preparation given and found that the mother had to take the milk to the neighbors for refrigeration. It was suggested that the family procure an icebox for the home, thereby saving time and material. The journey to the neighbors was 2½ miles and was taking time and gasoline. The mother would sometimes bring an extra bottle and it would sour before time for the feeding. On my last visit to the home an icebox, small but practical, had been installed. Mr. ——— said, 'This icebox certainly saves us a lot of worry.' This family was financially able to procure the icebox."

This excellent example of practicality merits most thoughtful consideration by all engaged in any phase of preventive medicine and what physician is not? The public is eager for sound guidance in matters of hygiene and health education. The family-(patient)-physician relationship affords the greatest and best opportunity to fulfill this obligation.

THE NEBRASKA MCH PLAN FOR 1939 APPROVED JUNE 3, 1938

This is the first of a series of three articles describing the purposes and activities of the Maternal and Child Health program in Nebraska, under the auspices of the State Health Department of which Dr. P. H. Bartholomew is the acting director.

A. HOW THE SEVEN REQUIREMENTS FOR STATE PLANS UNDER THE SOCIAL SECURITY ACT ARE MET.

1. Financial Participation by the State. The 1937 session of the Nebraska Unicameral Legislature included in its biennial appropriation bill (L. B. No. 70. Sec. 14) a total sum which makes available to the department $16,691.90 for Maternal and Child Health Work for the period July 1, 1938 to June 30, 1939. This sum constitutes the total amount of state funds available for matching Federal MCH appropriations. The attached budget series MCH-3, 3a, 3c, and 4 show how the state funds are to be used in carrying out this plan. The series likewise shows how Fund A and Fund B will be utilized. Authorization for the (State) Department of Health to expend Federal funds in connection with Maternal and Child Health activities is contained in Sec. 40 of the aforementioned L. B. No. 70.

2 The State Health Agency. The Maternal and Child Health activities will be administered by the (State) Department of Health under the immediate direction of the Director of the Division of Maternal and Child Health.

3. Methods of Administration.

a. STATE ADMINISTRATION OF MCH PROGRAM

(1) Organization charts. Organization charts are attached showing the organization of the Division of Maternal and Child Health and relationship of this Division to other divisions in the (State) Department of Health.

(2) Personnel. The following information regarding professional personnel is submitted:

Item no. on MCH-3a. Name. Administrative title. Professional title. Full time or part time.

1. Not named. Director, Maternal and Child Health Division—Physician—Full time.

No. not shown—E. W. Hancock, M. D., Act. Dir., Div. of MCH—Physician—Part time. To serve until full time director is appointed.

3. J. R. Thompson, DDS Dir., Div. of Dental Hygiene—Dentist—Full time.

(a) Director. Not yet selected. Efforts will be made to secure a physician qualified in Obstetrics and Pediatrics, with special training in Public Health. His duties are the direct execution of the plan and its extension, also technical adviser on professional matters throughout the state.

1. Acting Director, Part time, M. D. Northwestern University Medical School, 1917. Postgraduate, University of Minnesota. Five years' general practice including obstetrics and fourteen years in exclusive practice of pediatrics. FAAP and Licentiate, American Board of Pediatrics.

(b) Director of Dental Hygiene. D. D. S. Creighton Dental College, 1909; a licensed dentist with twenty-seven years of private practice; member of local and State Dental societies; member Society for the Promotion of Dentistry for children; held a responsible position in connection with the U. S. Public Health survey conducted in Nebraska in 1935. (This program included the dental examination of 11% of the school children. See USPHS Bulletin No. 226).

(3) Maternal and Child-health activities of State health department.

(a) Maternal Mortality Studies. A committee of the Nebraska State Medical Association conducts an annual study of Maternal deaths. Based on the results of this study, a trophy, known as the Oliver Wendell Holmes cup, is presented to the Councillor District having the lowest maternal mortality rate. This Division will assist in securing the necessary data for the use of the committee.

(o) Other Medical Activities. As a special project, the Division will initiate a campaign of education regarding the care of the prematures in addition to emphasizing this problem by means of refresher courses, lectures and literature; plans for the construction of inexpensive premature boxes will be widely distributed to physicians and hospitals, and a limited number of model boxes will be constructed. These models will be located at strategic points throughout the state where they may be obtained either for transportation of the baby or for use in the home or hospital. It is believed, on the basis of preliminary studies, that prematurity and its associated conditions constitute the largest single cause of preventable infant mortality in Nebraska.

(c) Activities of Director of Dental Hygiene in the Division of Maternal and Child Health. (State) Department of Health.

I. The continuation of dental health education on a state-wide basis, giving talks on preventive dentistry and showing moving pictures on dental health to schools, service clubs, Parent-Teacher Associations, women's clubs, mothers' clubs, teachers' institutes, etc.

II. Encourage the development of dental health clubs or committees to support dental health programs in counties and communities.

III. To see that schools are supplied with dental health educational material and literature whereby teachers can teach dental health intelligently.

IV. To see that schools are supplied with cards urging the children to go to their dentists for dental examinations.

(d) Public health nursing activities. Attention is invited to the fact that there is a nurse consultant in the central organization available for consultant service in connection with MCH as well as other activities. No MCH funds being involved for this person's services the item is not incorporated on any budgets any more than the state health officer, public health engineer, or any other of the central administration.

(e) Participation in programs of disease prevention and control. The Maternal and Child Health Division's participation in tuberculosis, venereal diseases, and communicable disease control will be an integral part of cooperative assistance in the generalized public health nursing program with the local administrative set-up in the Demonstration Units and with the special health committees in the respective County MCH Demonstration areas. Immunization against diphtheria and vaccination against smallpox will be stressed throughout all areas and in all activities throughout the state upon the part of both the division and the department.

(f) Training of staff. It is hoped at least two specially selected public health nurses will be provided with advanced training in public health nursing during the ensuing year. If these are selected from the MCH staff replacements will be made with registered nurses possessing training, experience, or sufficient educational and other qualifications to justify their appointment. In the event such training is provided, this will involve no funds—federal or state—from the MCH program.

In-service education. Staff meetings will be held at least four times during the year for all members of state and local staff. Problems of the division will be discussed and plans made for improvement and extension of the work.

(g) Postgraduate education for professional groups. Physicians. Refresher courses for physicians will be continued and extended. Efforts will be made to conduct a number of series consisting of six lectures in each of the twelve Councillor Districts. These lectures are given by a staff of obstetricians and pediatricians who are paid a per diem of $25.00 with travel expenses. At least two lectures are given during the day, one to a lay group and one to a professional group. Projectors for slides and films are available and a slide library will be developed for the use of the lecturers. Lecturers from outside of the state will be furnished for certain state-wide meetings. To cover the foregoing, $3,600.00 has been set up in the budget.

Dentists. Dental Refresher Courses. To supply qualified clinicians for eight refresher courses on Children's Dentistry, working in cooperation with the State Dental Association and the Society for the promotion of Dentistry for Children, and local dental organizations. Refresher courses to be held in different locations in the state whereby these courses will be made available to all the dentists. The sum of $500.00 has been provided in the accompanying budget for the purpose.

(h) Health education. Health education will be conducted in close cooperation with the Committee on Medical and Health Education of the State Medical Association. The refresher course lectures to lay groups mentioned in "(g)" will be an important part of this activity. Members of the Division staff will be available for talks to groups. Radio talks and other material will be furnished to speakers on request. Pamphlets on various phases of MCH will be prepared and widely distributed throughout the state. Widest possible use will be made of the press by furnishing releases and news items. Plans are being developed to introduce MCH material into the University Extension classes. In the event that a Public Health Educator is added to the staff of the (State) Department of Health, closest cooperation will be maintained with that individual.

(STATE) DEPARTMENT OF HEALTH

Lincoln, Nebraska

MORBIDITY SUMMARY—PRINCIPAL DISEASES

	1938			1937		
	June	May	Total to Date	June	May	Total to Date
Chicken-pox	117	185	1199	64	156	818
Diphtheria	15	8	97	0	5	43
Influenza	0	1	129	0	2	451
Measles	611	976	2433	62	117	396
Meningitis, C. S.	2	0	33	0	9	26
Poliomyeltis	0	0	2	3	0	8
Scarlet fever	65	106	967	103	267	1796
Smallpox	6	53	166	13	17	155
Tuberculosis	28	15	107	13	8	89
Typhoid fever	0	0	7	2	0	8
Whooping cough	55	49	283	55	63	320
Gonorrhea	84	67	502	128	77	437
Syphilis	73	48	433	130	122	464

SOCIETIES

The **Scotts Bluff County Medical Society** held its June meeting at the Scottsbluff Country Club June 16th. This was a dinner meeting of the doctors and their wives in honor of Dr. Frank W. Plehn of Scottsbluff, the dean of panhandle physicians. Dr. Plehn has practiced medicine forty-five years—thirty-one years in this community. Fifteen doctors and their wives were present. Both Dr. and Mrs. Plehn received presents from the society.

Dr. A. L. Miller of Kimball, president-elect of the Nebraska State Medical Society, was the speaker of the evening. He compared the practice of medicine in various parts of the world with the practice here and urged the leaders of the profession here to steer us clear of state medicine. Dr. Miller also showed pictures of his recent trip into South America.

At a short business session plans were made for the all-day meeting of the Twelfth Councillor District to be held in Scottsbluff on September 27th, when the speakers will be Dr. Adolph Sachs and Dr. Earl Sage of Omaha, and Dr. T. Leon Howard of Denver.

P. Q. BAKER, Sec.-treas.

The **Four County Medical Society** held its regular meeting in Greeley Thursday, June 12th, in the private dining room of the Douthit cafe.

Among those who attended the meeting were:
Dr. and Mrs. W. J. Hemphill of North Loup.
Dr. and Mrs. C. J. Miller of Ord.
Dr. and Mrs. J. N. Round of Ord.
Dr. and Mrs. Roy S. Cram of Burwell.
Dr. F. A. Barta of Ord.
Dr. A. H. Holmes of Wolbach.
Dr. John C. Giever of Spalding.
Dr. E. A. Watson of Grand Island.

Dr. Wm. N. McGrath of Grand Island.
Dr. and Mrs. Eldon J. Smith of Burwell.
Dr. and Mrs. J. L. Brannen of Greeley.

Tri-County Medical Society

A clinical roentgenological and pathological discussion of unusual cases of gastro-intestinal diseases, by Drs. Rodney Bliss, Howard Hunt and Charles P. Baker, of the medical school of the University of Nebraska, was outstanding in the program presented at a dinner meeting of the Tri-County Medical society, held Thursday evening, May 26, 1938, in the mezzanine floor dining room at the Hotel Yancey.

Dr. Baker, using lantern slides, also presented an interesting discussion on gastritis and Dr. A. L. Miller, Kimball, president-elect of the Nebraska Medical society, spoke briefly on organization matters and plans for the society's annual meeting, to be held here in the spring of 1939.

Dr. E. E. Farnsworth, president of the Tri-County society, presided and more than 15 Central Nebraska cities and towns were represented in the attendance.

Dr. Miller was an honored guest.

The **Madison Six County Medical Society** June meeting was held Tuesday, the 21st at the Hotel Norfolk with dinner at seven.

The program follows: Dr. F. J. Murphy, Omaha, First Stage Dystocia; Dr. M. E. Grier, Omaha, Ectopic Pregnancy; Dr. C. S. Moran, Omaha, Recent Advances in Female Endocrinology.

Committee in charge: Dr. U. S. Harrison and Dr. E. E. Curtis.

The **Adams County Medical Society** met in regular session, June 1st, at the Ingleside State Hospital. There were approximately 45 in attendance, including their wives and visitors.

Following the business meeting, Dr. Miller, president-elect of the State Medical Society, gave a very fine talk concerning medical economics. Following this, Mr. W. E. Collins, representative of Mead Johnson Co., showed a recently made film on poliomyelitis. Mr. Cameron of the E. and J. Company, then demonstrated a new type of inhalator.

The meeting was then adjourned until next October.

W. L. SHAW, M. D., Sec.-Treas.

ITEMS OF HUMAN INTEREST

Dr. Palmer Findley of Omaha, is touring northern Europe.

Dr. Edgar Allen of Rochester, Minn., visited Cozad in June.

Dr. M. B. Wilcox of Holdrege visited Estes Park in July.

Dr. and Mrs. L. F. States of North Platte, are visiting in Colorado.

Dr. W. L. Cameron is reported seriously ill at his home in Lincoln.

Dr. and Mrs. W. W. Carveth of Lincoln are vacationing in Montana.

Dr. John Duncan of Omaha, has returned from an extensive trip to Europe.

Dr. and Mrs. Earl Farnsworth, of Grand Island, are vacationing in Minnesota.

Dr. F. X. Rudloff of Battle Creek, spent the latter part of June fishing in Minnesota.

Dr. and Mrs. J. M. F. Human of Omaha, vacationed in the northern lakes of Minnesota.

Dr. Wilbur F. Eaton, a graduate of the University of Nebraska, has located in Plattsmouth.

Dr. and Mrs. J. E. Meyers of Columbus spent the early part of July traveling in the South.

Dr. B. H. Grimm has purchased the medical practice and equipment of Dr. Dee L. Abbott of Sidney, Nebr.

Dr. Ward Peterson of Omaha has accepted a research fellowship in pediatrics. He is presently living in Denver.

Dr. J. A. Lanspa of Tecumseh took post graduate work in surgery at the Cook County hospital, Chicago, in June.

Dr. and Mrs. B. F. Bailey of Lincoln will leave about Aug. 1 for Carmel-by-the-Sea where they will be until Oct. 1.

Dr. Hilbert Sabin, a Beatrice product, was recently appointed assistant surgeon at the Massachusetts General Hospital.

Dr. Frank Gallagher, formerly associated with a Nebraska City group of physicians, has moved to La-Crosse, Wisconsin.

Dr. C. D. Evans, Jr., of Columbus, recently visited his father, a pioneer Columbus physician now ill in Highland Park, Ill.

Dr. Chester Waters, Jr., of Omaha has accepted a residency in orthopedic surgery at Duke University Hospital in Durham, N. C.

Dr. and Mrs. George Walker of Lincoln, attended a medical meeting of the National Life Insurance Association in Asheville, N. C.

Dr. R. H. Kohtz, a graduate of the University of Nebraska and for past two years in active practice in Montana, has located in Plattsmouth.

Dr. Ralph Lovelady of Sidney, Iowa, suffered from an infection of the index finger contracted in the process of lancing a carbuncle on a patient.

Dr. D. T. Martyn of Columbus was in Chicago in June to attend graduation exercises of his daughter from the Nurses Training School of Cook County Hospital.

Dr. R. D. Bryson of Callaway spent the month of July in the Pacific Northwest and Pacific Southwest. Dr. C. C. Lull of Smith Center, Kansas, is doing locum tenems work during his absence.

Dr. C. C. Drummond for the past forty years associated with the Norfolk State Hospital has retired from service and with Mrs. Drummond will live in Oregon. Dr. Drummond will be succeeded by Dr. Charles Ingham, son of Dr. C. T. Ingham of Wayne. The younger Ingham has until now been associated with the State Hospital at Salt Lake City.

Dr. Clarence F. Bantin of Omaha late in June was a victim of holdup. A man who posed as a patient and who consulted the doctor following an appointment was examined in the usual manner. On completion of the examination, the man stuck a gun in the doctor's back, ordered him to his seat, tied and gagged him, and took jewelry and all cash available.

ATTENTION! ADVERTISERS

The codfish lays a million eggs,
  The helpful hen but one,
But the codfish doesn't cackle
  To tell you what she's done;
And so we scorn the codfish coy,
  While the helpful hen we prize,
Which indicates to thoughtful minds
  IT PAYS TO ADVERTISE.

—Exchange.

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The Speakers' Bureau of the Committee of Public Health and Medical Education of the Nebraska State Medical Association*

J. D. McCARTHY,

Omaha.

The rank and file of the medical profession in the United States should be keenly aware of the trends which are profoundly changing their status and rather placid isolation of the past, to one of future uncertainty.

During the past twenty-five years the world has witnessed action and aftermaths never before experienced in a similar period down through the ages. Because of this, political and social problems have arisen which up to now are far from solution. It is neither surprising nor unnatural, therefore, that a pandemic of discontent, all inclusive as it is, should pass by without leaving the medical profession unscarred. As a matter of fact, it is surprising indeed, with social unrest rampant, that the medical profession of this country, mersed as it is in one of the fundamentals of life—health, has not only been threatened, but regimentated as in many European countries.

Some may say that so-called "organized medicine" through its militant opposition to such changes has been the factor, politically and otherwise, in at least postponing such a day. I wonder, however, as we review the achievements of American medicine down through the years, whether we are not unsuspectingly reaping a reward from the people in their will not to interfere, unless forced, with the ideas of the medical profession in maintaining their independence. Although the pressure for drastic changes has been great by well organized groups, many feel that the medical profession can, and will, solve many of its problems, thereby bringing about a mutually acceptable relationship between physician and layman.

Few will deny the fact that the progress made in training the under-graduate and newly ordained physician, especially during the past twenty-eight years, has been phenomenal. In other words, American medicine has, in its own way, unaided or abetted by any governmental agency, greatly improved undergraduate instruction, to the end that better trained physicians are being graduated each succeeding year.

The need of greater opportunities for postgraduate study in this country for all practicing physicians has long been recognized. Not so many years ago, one seeking such opportunities was forced to go to European medical centers because of lack of organized postgraduate study in this country. It is therefore to the credit of medicine that in recognizing this need, it set itself to the task of providing such opportunities—again unaided or abetted by any governmental agency.

In this field only a beginning has been made. However, today we find the American Medical Association, the component State Medical Societies, the Association of American Medical Colleges, the American College of Physicians, the American College of Surgeons, the United States Public Health Service, and many other such agencies, bending every effort toward plans which will permit postgraduate study for all physicians at little expenditure of time and money. It might be added that when this has been accomplished, we will have fulfilled in the minds of laymen something which they feel should have been done long ago.

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*Read before the Nebraska State Medical Association assembly, Lincoln, April 25-28, 1938.

With the forward strides American medicine has made, in diagnosis, treatment, educational opportunities for the undergraduate and graduate, all of which have been well aired in the lay press, is it to be wondered that the layman now demands at least a working knowledge of how he must go about trying to maintain his good health? Through the writings of many, good and bad, his appetite for such information has been whetted to the point of demanding information on matters relating to health. Apropos of this demand, we must not fail to recognize that there has been built up in the minds of some, skepticism, in others certain phobias, and in still others through paternalistic gestures—"rights," which cannot be ignored.

I have tried in as few words as possible to paint a picture with which I know this audience is quite familiar. To discuss my subject, however, I believe this preface necessary, if for no other reason than to correlate that which has happened, is happening, and may happen to the practice of medicine.

Having noted the many changes occurring in undergraduate and postgraduate training, may we now give some thought as to how we, as a Society and as individuals, can supply at least part of the necessary remedial care of the more recently changing relationship (and all that that represents) between the physician and layman.

Humanity is today looking for leadership in all matters pertaining to health. The government, both Federal and State, has made definite advances toward acting as leaders. Well organized foundations, federal, state, and local social agencies, have very definitely shown that they, too, would like to take the lead. It is not necessary to go into detail with this audience as to why there should be only one recognized type of leadership as far as the layman and his health are concerned, that, of course, being the medical profession. It does seem to me, however, that we have been quite lax in not having recognized long ago the public cry for leadership regarding matters of health, but rather have permitted a serious disturbance in the doctor-patient relationship through our indifference and non-recognition.

The physicians of Nebraska should, in my opinion, be commended, for when the true conditions were finally recognized, immediate plans were formulated to correct our mistakes with a view to restore the wholesome relationship between the physician and layman. Incidently, Nebraska has been one of the first States in the Union to recognize the trend of the times from this angle.

The Nebraska State Medical Association, in 1936, through the leadership of Dr. George Covey of Lincoln, then President of our Association, adopted a plan which it was felt might be of value in meeting these trends. Dr. Covey called the first meeting for consideration of the idea in June of 1935. This meeting was held in Omaha. Dr. W. P. Wherry, Chairman, Dr. J. S. Welch of Lincoln, Vice-Chairman, Dr. J. D. McCarthy, Chairman of the Speakers' Bureau, Drs. Poynter and Riley, Deans of Nebraska and Creighton University Medical Schools, the Chairmen of the special committees already functioning, which included the Maternal and Child Health, Tuberculosis, Cancer, Hard-of-Hearing, and Fracture Committees, represented by Drs. Sage, Hancock, James Kelly, Uren, and Thomson, along with Drs. Covey and Fouts, and Mr. M. C. Smith, Executive Secretary, were in attendance. Subsequently informal meetings of this group were held for the purpose of organizing and perfecting a plan of procedure. This plan was fully outlined in the Journal of our State Association, the first article appearing in September, 1936.

The Committee, now known as the Committee of Public Health and Medical Education, was officially created through an amendment to the Constitution and By-Laws of the Nebraska State Medical Association, the House of Delegates, on May 12, 1937, adopting this amendment in toto, except for Section D, which had asked for an appropriation of one thousand dollars from the General Fund to carry on the outlined program. This latter was rejected and a motion was made that the Council be asked to decide upon "a reasonable amount for this Committee." The Council, at its second meeting, May 12th, in setting up the budget for 1937-1938 alloted $150 to the Committee, which was acceptable to the House of Delegates and passed at their meeting held May 13, 1937.

This amendment states in part that "It shall be the duty of this Committee to direct the educational policies of the Nebraska State Medical Association, referable to physicians and laymen in health education programs, and cooperate with the Nebraska State Health Department, or any other organization interested in matters pertaining to health." As may be seen, broad interpretation may be found in the wording of this paragraph.

With this in mind, the Committee organized the already planned Speakers' Bureau for the purpose of directing the educational policies of the State Association.

A needed budget had been set up in order that the Bureau might be conducted in the way the

Committee had outlined. The Committee was of the opinion that the purposes for which the Bureau had been created were impossible of accomplishment with the $150 grant from the House of Delegates instead of the original one thousand dollars requested. It was felt, however, that a start should be made, and therefore the temporary office of the Speakers Bureau was set up in 1036 Medical Arts Building, Omaha, Nebraska.

The functions of the Bureau were again publicized through the Nebraska State Medical Journal, and a letter of explanation was sent to all members of the Association in July of 1937. A questionnaire was included in this letter, requesting those who were interested and willing to serve as speakers of the Bureau to complete the questionnaire and return. The questions had to do with choice of subjects for scientific county society programs, refresher courses, lay and radio addresses.

The response to this questionnaire was such that it was again necessary, in October 1937, to send out a similar questionnaire. To this last, the response was no better than the first. In all, a total of ninety-seven questionnaires were returned, forty-nine the first time and forty-eight the second, out of approximately two thousand three hundred sent out. It is also interesting to note that a great many of the men in the State, especially well qualified for this duty, made no response whatsoever.

In the meantime the Unicameral Legislature, toward the end of the 1937 session, transferred six thousand dollars for the biennium from the Board of Medical Examiners Fund. This was earmarked for a lay educational campaign on venereal diseases and tuberculosis. It was specified that this fund would be administered through the State Public Health Department, and was matched by a similar amount from the Federal Government.

Fortunately for the Nebraska State Medical Association, Dr. P. H. Bartholomew, Director of the Nebraska State Public Health Department, was in full sympathy with the plans of the Committee of Public Health and Medical Education. The Committee met with Dr. Bartholomew on many occasions, and finally a workable plan was adopted. The State fund, as has been previously mentioned, had, by statute, been allocated for an educational campaign on Venereal Diseases and Tuberculosis, with certain restrictions as to how it could be used. It was therefore necessary to obtain other funds through the State Association. This was accomplished at a meeting of the Council held in December 1937, at which time one thousand dollars was transferred from the Legal Defense Committee Fund to the Speakers' Bureau Fund, which has since been administered by Dr. Roy Adams, Secretary-Treasurer of the State Association. Both of these funds have been used exclusively for the defraying of expenses incident to the work of the Speakers' Bureau and State Department of Health in the educational campaign directed against Venereal Diseases and Tuberculosis. No salaries have been paid out of this fund, as far as the Bureau is concerned, except that for the Bureau's secretary, Miss Irene Rau.

An office was opened in January of 1938, located at 1031 Medical Arts Building. Letters to all the Councilors, County Secretaries, and members of the Nebraska State Medical Association, informing them of the opening of the Bureau office and enumerating the services to be had through the Bureau office, were forwarded in February 1937. These letters pointed out:

I. WHAT THE SPEAKERS' BUREAU WILL NOT DO

1. Interfere with County Medical Societies making direct contacts with speakers for programs.

2. Dictate policies of program set-up.

3. Urge speakers to plan, through the Bureau, addresses that they have been personally invited to give before a medical society.

II. WHAT THE SPEAKERS' BUREAU CAN DO

1. For the individual physician and County Medical Society:

   a. Arrange programs for any one meeting or plan programs for the year's meetings in advance.
   b. Arrange symposia.
   c. Arrange postgraduate courses.
   d. Arrange radio talks for the layman.
   e. Aid in procuring material suitable for lay programs.
   f. Aid in procuring moving pictures suitable for lay audiences.
   g. Avoid conflicts in lay and medical programs in the same or nearby counties.
   h. Obtain aid from the Nebraska State Public Health Department in arranging certain types of programs and conservation health studies in certain counties.

2. For the layman:

   a. Arrange lay and radio addresses for clubs, societies, auxiliaries, students, etc.

b. Obtain information for lay societies regarding medical subjects.

Note: The Educational Committee is of the opinion that all lay programs, regardless of type, should be sponsored by some individual physician or medical society, and that these programs be conducted by one or more physicians.

III. WHAT SUCH SERVICE MAY MEAN TO THE NEBRASKA STATE MEDICAL ASSOCIATION AND ITS MEMBERS

1. Correlate and coordinate scientific assemblies for the physicians.

2. Aid in making the State Society a more cohesive body.

3. Interest non-member physicians and stimulate them to become members.

4. Direct the attention of the layman to the leadership of the State Association in matters pertaining to public health.

5. Steer the layman into the hands of the medical profession rather than lay social agencies, whether federal, state, county, or city, when seeking information or help on public health matters.

6. Attract the attention of federal and state administrators to the effort being put forth by the State Association and its members to educate the layman on public health matters, which may in turn make them look to the physicians for guidance in all legislation pertaining to health.

Note: If the physician is to maintain his identity, he must awaken to the many social reforms on foot, so that when the time comes, the directing of policies relating to public health will be his, rather than the politically and socially-minded layman.

7. Physicians giving addresses to the lay public will not only help in educating the laity in Public Health matters, but also themselves. It is also helpful from the standpoint of public speaking, giving to the physician the necessary assurance and poise. In this way it should undoubtedly aid all speakers to not only be able and willing to handle lay addresses, but also addresses on scientific subjects before medical bodies.

To date the Speakers' Bureau has arranged the following programs:

1. Scientific programs for County Societies—46, which included 69 speakers.

2. Lay programs—198; (108 of these made up the recent Venereal Disease campaign), a total of 153 physicians participating.

3. 32 radio broadcasts have been cleared through the office.

4. 2 talks have been arranged for nurses.

As far as determinable, programs arranged for the medical societies and lay groups, exclusive of those of the venereal disease campaign, have been entirely satisfactory, there being little or no critical comment.

The recent State-wide venereal disease campaign has, on the whole, been very successful. This campaign was rather hurriedly planned. The outlining of such a plan was only initiated four weeks prior to the actual speaking engagements. It was felt that considerable experience could be gained in arranging a campaign of this type, and that it would be well to have such an experience to report at this meeting. To have planned it for a later date, prior to the summer months, would have meant conflicts with the Nebraska State Medical Association and other medical society meetings, which might have caused considerable embarrassment. It was also pointed out that the fund appropriated by the legislature had not been used, and should the State Association later on seek more, the inaction might prove costly.

Through the combined efforts of our Executive Secretary, Mr. M. C. Smith, and the Speakers' Bureau, 126 cities were chosen for these addresses, and an immediate attempt was made to procure speakers for these engagements. Mr. Smith's office arranged for chairmen for these meetings, a local physician being chosen, who in turn was asked to obtain quarters for such addresses and publicize the meeting.

Sixty-three members of the State Association were invited to take part in this campaign, two cities not too far apart having been assigned to each speaker. To obtain fifty-eight speakers for the final number of programs arranged, totalling 108 (it being necessary to cancel out thirty of the originally planned addresses, eleven other cities being substituted) it was necessary to issue 116 invitations. In the final analysis, fifty-eight of our members accepted these assignments and fifty-eight refused.

In commenting on our experiences with this recent campaign, it might be pointed out that:

1. Cooperation on the part of the members of the State Association in this important duty has not been too good. Some of the men refusing an assignment had real reasons for not being able to participate in the campaign, but seemingly in too many there was a spirit of disinclination.

2. Naturally it is necessary to obtain prompt answers to letters of inquiry regarding plans for a campaign of this type. Too frequently it was found necessary to write three or four letters to a member in order to obtain a reply, and there are some who have yet to answer any letters. These two factors were accountable for a tremendous amount of unnecessary correspondence on the part of a very limited staff.

3. Considerable difficulty was experienced because of the poorly planned, or not-planned-at-all local arrangements. Fortunately these were few, the great majority of the local chairmen doing a splendid job. There were a few of the local chairmen, however, who in some instances did absolutely nothing, either as to arranging for a speaking place or publicizing the meeting, although obligating themselves to do so by accepting the chairmanship. Speakers giving of their time and energy, found upon their arrival in some of these cities that no arrangements whatsoever had been made. It is recognized that in some instances, because of last minute cancellations, the local chairman had little or no time to complete arrangements. However, it might be pointed out that these meetings which were so hurriedly thrown together for one reason or another were, for the most part, handled beautifully by the local chairman.

4. Three speakers who had promised to address audiences in three cities, although all arrangements had been made and an andience waiting, did not put in an appearance.

5. Stormy weather seriously interfered with some of the speaking engagements. Because of this, it was necessary to cancel some of the talks and postpone others. This meant re-arrangements on very short notice, discommoding all concerned.

In the final analysis, it is believed that the Venereal Disease campaign was most successful. Valuable experience in management, which should be of real value in arranging contemplated educational programs in the future, has been gained. It has been demonstrated that we have in the Nebraska State Medical Association a group of workers entirely reliable. Most important, over 16,000 citizens of the State of Nebraska were given at least some of the fundamentals regarding the venereal disease problem, and not one known instance of dissatisfaction has been voiced. True appreciation of our efforts has been expressed by many.

In this paper I have tried to point out what your Medical Association is trying to do through the Committee on Public Health and Medical Education. It is the hope of your Committee that through this discussion the aims and purposes of this movement may be better understood by all members of the Nebraska State Medical Association. Educational campaigns have been tentatively planned for the future, and it is felt that if carried through successfully they will at least help in cementing the type of relationship desired between physician and layman.

The Practice of Medicine has changed. Dislike the trend, rant and rail against it as you may —the change is here. For the sake of our families and those of our friends and patients, we must recognize that evolution is beckoning to us, and that today we are not only expected to carry on with the traditions of saddle bag medicine, family physician and specialist, but also act and perfor the duties of "teacher." Evolution along these lines has not been gradual, but precipitous, and naturally, we have difficulty in orientating ourselves to such a radical change. The state of mind created through years of training and teaching is not a thing responsive to sudden and radical reform overnight. However, we are today faced with a problem demanding a sympathetic understanding, and through this sympathetic understanding, we must possess the ability to cope with our problem. Those of us who will not recognize this trend play directly into the hands of those least qualified to lead, teach, and practice the Art of Medicine—and note I say the Art of Medicine. Those of the profession recognizing this view, cooperate regardless, knowing that in the final analysis it is our one hope in maintaining our identity as a vocation. Should we fail to recognize this trend, we shall, in the future, have plenty of time for reflection, and damn the man who invented the punch clock.

Finally, it should not be forgotten that through efforts such as these we are establishing in the minds of the layman, the idea that the medical profession is the body to whom they would like to turn in all matters pertaining to health. Then should socialized reforms threaten, citizens will undoubtedly rally to our cause, we having already demonstrated to their satisfaction our right to govern in matters pertaining to health.

This is the wish of your Committee.

The Bureau is at your service.

DISCUSSION

DR. R. C. BUERKI, (Madison, Wisconsin): I was flattered and honored to have Dr. Wherry, who is a member of the Commission on Graduate Medical Education, ask me to sit in with his Committee and with you while you discussed the various problems confronting you. You are doing a relatively unique job in public education. At present my specific interest is in graduate medical education. The Commission, of which I am Director of Study, will not attempt to duplicate the work of the Council on Medical Education and Hospitals of the American Medical Association. It will work with the Council on Medical Education and Hospitals, the American College of Surgeons, the Association of American Medical Colleges and other organizations interested in this problem. We are interested in the philosophy of the Graduate Medical Association. I am pleased to learn that you are developing a philosophy of public education. You realize that you must educate the public who, after all, are your patients. When the public is educated, it will interpret intelligently your ideas and ideals.

I was glad to hear Dr. McCarthy say you are teachers, because when you are teachers, you are also continuing your own education.

I am glad to learn that this general cooperative educational program on the part of your Society is working so successfully. I voiced to Dr. McCarthy and want to voice to you this warning: In the months and years to come, do not let your enthusiasm wane. When called on, realize that you have a contribution to make to organized medicine and to the public of your community.

I thank you.

DR. W. P. WHERRY, (Omaha): I have nothing to offer, other than to say that graduate medicine is the dominant theme in medical circles now. Few of us know what the ultimate result will be. We are attempting to analyze our problem. The ultimate objective obviously is to maintain a solidarity in good medicine. We are certain this can only be attained through a carefully planned program of education to both the lay public and the profession. If the profession does not measure up, obviously we can not carry on to the lay public, and the end result will be undesirable from the standpoint of medicine.

I hope you have listened attentively to what has been previously discussed.

DR. R. W. FOUTS, (Omaha): It is a little bit unusual for an address of this sort to come before the general scientific section. Usually an address of this kind is made before the House of Delegates or the governing body of our Association. However, I think the scientific program committee was wise in its decision to bring to the membership at large something about this new undertaking in the State Association. I believe the work and the purpose of the Speakers' Bureau and this Committee are but little understood by the general membership. In fact, the question of a well organized Speakers' Bureau is but little appreciated by the membership.

As Dr. McCarthy stated, after sending out 2,000 letters, he received 98 replies. That is a sad commentary upon the cooperation of the members of this State Association! I believe it is due only to one thing: you do not understand and appreciate the purposes and the possibilities of this Bureau. I want to urge you to answer these letters. Your officers and committees are doing nothing except what has been thoroughly threshed out and believed to be for the best interest of organized medicine—the Nebraska State Medical Association and for us as practicing physicians in this State. Without your cooperation we can get nowhere. It really is a lamentable statement to have to be made that we can only get 98 responses out of 2,000 letters.

To get down to the real gist of the matter: as I stated yesterday in the meeting referred to by Dr. Buerki, it is supposed to be a program of lay education. The part I have tried to play was to help to promote something that will make every member of the State Medical Association of Nebraska feel he has a part and something to do. Every one of you has been given an opportunity. You have been called upon to serve, and yet we get only 98 responses out of 2,000 letters.

We do not want that to continue. We want you to help this Bureau and your State Association, in order that your State Association and this Bureau may help you. I hope next year when letters are addressed to you, you will answer, and that when asked to do something, you will respond.

I thank you.

PRESENT STATUS OF SHORT WAVE DIATHERMY

From the published mass of conflicting opinions on short wave diathermy Frank H. Krusen, Rochester, Minn. (*Journal A. M. A.*, April 16, 1938), extracts a number of conclusions. Short wave diathermy has become the accepted term, at least in the United States, for treatment with short radio waves of wavelengths between 3 and 30 meters. Most observers prefer a vacuum tube apparatus of high wattage output for the production of such radiation, although spark gap apparatus has been used effectively by some workers. While there appears to be no great difference between the effects produced by conventional and short wave diathermy, short wave diathermy seems to produce deeper, more uniform heating and is more readily applied, although dosage control is more difficult than with conventional diathermy. So far as competent investigators have been able to determine, there is no demonstrable selective thermal action in the living body. The consensus (particularly of those who have performed careful experiments) would seem to be that the effect of various wavelengths between 3 and 30 meters is approximately the same. There are apparently no specific bactericidal effects other than those attributable to heat, either in vitro or in vivo. There is no reason to believe that treatments of five minutes or less have any marked action other than a psychic one. No specific physiologic effects other than those attributable to heating have been proved to exist. Although burns may occur from short wave diathermy, they are less likely to be found than in conventional diathermy. Lack of a satisfactory method of determining dosage is a definite handicap in administering short wave diathermy. It is claimed that short wave diathermy is particularly indicated in the treatment of suppurative lesions; however, insufficient comparative studies have been presented to determine whether or not it is more effective than other simpler forms of mild heating. The indications for the use of short wave diathermy should be considered to be the same as those for the use of conventional diathermy. Further studies may prove that other indications do exist.

Democracy in Medical Organization*

ROY H. WHITHAM, M. D.,

Lincoln.

Our American heritage has imbued us with fundamental ideas of individual freedom of action and speech and of equality of opportunity which are so much a part of us that we have assumed their existence complacently and rarely questioned their existence or continuance. As our civilization has become more complex an increasing number of restrictions has been placed about us to protect us from the carelessness, selfishness and greed of others and to protect others from our own carelessness, selfishness and greed. The almost uncontrolled freedom of the pioneer has been replaced by the controlled freedom of the modern citizen; in fact, control has gone so far and at such an accelerated pace that we are beginning to question the continuance of freedom in the future. In our generation we have seen the loss of certain rights of business and agriculture which we had always considered inalienable personal rights. The role of the economic theorist and social reformer in these changes is familiar to all.

Our professional freedom and opportunity have fallen victim to some of these changes and will undoubtedly suffer still further whether or not the dread "State Medicine" is precipitated upon us. The imposition of further restrictions and regulations and indeed the control of the practice of medicine by agencies outside the profession is not improbable. The extent and nature of this control will be, to a great extent, dependent upon the profession itself and especially upon its leadership. Shall we demand a leadership which represents the point of view of the practicing physician, which is closely and continuously attuned to the problems of the great mass of the profession, or shall we allow ourselves to fall under the influence of the academic theorist or political appointee who has not had the experience of private practice and does not see eye to eye with the great majority of the profession?

Medical organizations exist primarily and in many instances exclusively for the promotion and dissemination of medical knowledge. They are in no sense labor unions whose purpose is to bargain more effectively through united effort. Since increasing medical knowledge is the purpose of organization it is natural that attainment in medical science both practical and theoretical should be recognized. Laboratory and clinical research, medical writing and great clinical ability gain deserved recognition and acclaim from the profession. Let us look at these organizations, their purposes, membership, activities and leadership.

They may be divided into three main groups; the exclusive societies, the specialty organizations and the large democratic associations. The exclusive societies are purely scientific in their purposes. Their membership is confined to the great leaders in medical science and therefore research workers and teachers fill most of their ranks. Their meetings and publications are scientific and as societies they are not concerned with social and economic problems. Their leaders are the great scientists and teachers. Membership in these societies is one of the great ambitions of the medical scientist because it constitutes recognition of scientific attainment. It is beyond the reach of the average practicing physician; he is almost unaware of their existence since their activities have not touched his life. More recently, however, these organizations have had a voice in the establishment and policies of the specialty boards which are a direct concern of the private physician.

The specialty organizations also were founded for scientific purposes. Their meetings and publications offer the specialist opportunity to keep abreast of the developments in his field and are of great benefit to him. The membership of these organizations is made up of most of the well qualified specialists, the great majority being private practitioners. However, there is a marked tendency for these organizations to be dominated by teachers in medical schools and employed specialists of large clinics. This is not surprising in view of the scientific prominence of these men. In certain specialties which are becoming more rapidly involved in governmental activities there is a tendency to place the government personnel in positions of power in the organizations. As long as the activities of the organization remain purely scientific there is no great harm in this tendency although it is somewhat distasteful to the private practitioner, but the activities of these organizations is being extended beyond the purely scientific.

With the recent creation of the specialty boards, the influence of the specialty organization on medical practice is being felt. The organizations have had a great deal to do with the creation of these boards and the establishment of their standards and policies. If the boards are as important as they promise, domination by teachers and other non-private practitioners is very unfortunate since they directly affect the practice of medicine. In one specialist group with which I am familiar there is controversy over the recognition of preceptorship as a part of post-graduate training. The professors seem to feel that post-graduate training over long periods in teaching institutions is the only proper means of qualifying for specialty practice, while private practitioners believe that controlled private practice may qualify a man for recognition as a specialist. These problems deserve careful thought and action on the part of the general profession; the leadership of the professors must not be too complacently accepted.

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*Presented before the annual meeting, Nebraska State Medical Association, Lincoln, April 25-28, 1938.

The only large truly democratic organization is the American Medical Association. It alone is truly representative of the entire profession. This organization with its component parts is interested in the development of medical science, in medical education, medical practice, the welfare of the medical profession and in the public welfare. Its own government is representative and democratic. While its scientific activities are dominated by eminent scientists, its general policies are controlled by representatives of the mass of practitioners. Thus its leadership is in the hands of those who have the point of view of the medical practitioner and not that of the research scientist, teacher or clinic physician. It is concerned with the public welfare but is not dominated by the social reformer. It represents the practical point of view and not the theoretical. All of us may not agree with its actions and policies in national affairs but the great majority of us favor its point of view, and feel that through its leadership the public interest as well as ours will be best served.

The incident of the recent "Principles and Proposals" illustrates the importance of the democratic organization. These orginated with a group of physicians who were cooperating with social reformers to study means of changing the practice of medicine. They were sponsored and approved by a large group of prominent medical teachers and others who are not medical practitioners. That the medical profession wanted none of this leadership became apparent when the practitioners were approached and under the influence of the American Medical Association the "Principles and Proposals" backers retreated into silence. Recently a great protest arose from the profession when a prominent medical scientist revived the subject in his presidential address before an important specialty organization. Out of the whole incident can hardly come any good, but harm may result if the social reformers can lead a gullible public to believe that the medical profession has a revolt in its organization.

Fortunately the academic-minded full time clinical teacher does not exist in the medical profession of Nebraska. The clinical teachers in our schools are also private practitioners and they have the practitioners' point of view. Our leaders will under these conditions continue to be practitioners and we can rest assured that they will dominate the State Society. Let us nevertheless keep a watchful eye on our State Organization, let us see that it remains democratic and attuned to the opinions of practitioners. Let us be fearful of sociological and theoretical influence in those regional and national organizations to which we belong, and demand from them the practical point of view where their activities touch on medical practice. We must see that the democratic medical organizations remain dominant in local and national medical affairs; their leadership must continue to represent the practical point of view of their members.

EFFECT OF VITAMIN B_1 ON PERIPHERAL NEURITIS OF PELLAGRA

Tom D. Spies and Charles D. Aring, Cincinnati (*Journal A. M. A.*, April 2, 1938), chose six cases of classic pellagra for the study of peripheral neuritis. In four, pellagra had developed after the substitution of the calories of alcohol for the calories ordinarily obtained from food. In the remaining two cases the pellagra was unassociated with chronic alcoholic addiction (the so-called endemic type of pellagra). It has been pointed out previously that the severe peripheral neuritis associated with pellagra usually progresses when the patient is restricted to a pellagra-producing diet. Irrespective of whether the pellagra followed long-standing ingestion of alcohol, the prompt relief of the spontaneous pain of neuritis by the intravenous injection of crystalline vatamin B_1 was striking in all cases. Nicotinic acid by mouth was used in three cases and completely relieved the severe stomatitis and glossitis and promptly produced healing of all the lesions of the mucous membranes. The observations suggest that the painful peripheral neuritis in these particular cases was caused, at least in part, by a lack of vitamin B_1. The response following the injection of this substance was prompt and dramatic. These studies complement the suggestion offered a number of years ago that the clinical manifestations of the pellagra syndrome are perhaps caused by a lack of more than one essential substance. Not all persons with pellagra, however, have peripheral neuritis. While these pellagrins responded to a basic diet plus supplements of nicotinic acid and thiamin (vitamin B_1), it is not recommended that such a diet be used in the treatment of pellagra.

Responsibilities and Problems of 50 Years of Practice*

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Blair

When a physician has practiced his profession for fifty years he has done that which most of us are denied. It is not an easy task. He is in a position of divided responsibilities. Those of his patients, his community, his profession and his family. He has responsibilities to his fellow physician and medical organizations as well. It is not always an easy task to fulfill one's duties no matter how much one may want to, as many times circumstances over which one has no control enter into the problem. It is a foregone conclusion that Dr. Riley has certainly set an example that the rest of us would do well to follow. Upon our conduct of today depends the future of medicine, for today is but the future of the past. I am sure that had the medical profession awakened to this fact some years ago, we would not have to contend with the many problems that now confront us. Our responsibilities begin with first fitting ourselves in the best possible manner to practice the healing art, and in keeping abreast with the advance of medicine. That a man is still in active practice after fifty years, proves that he has kept up with the pace that has been set before him, otherwise he would have been outdistanced by his fellows and left by the wayside.

The community demands much of the physician for in his hands are the factors that spell either a healthy or a sickly environment. In the management of contagious diseases much depends upon the manner in which this is carried out. The danger is not only to the individual, but families as a whole, schools and even the entire community must not be lost track of. I have seen several epidemics result from improper or neglected quarantine procedures. This phase of practice adds to the responsibility of the physician, and explanations are of no value here, as he is judged wholly by results. Many men have been forced to leave for a new field by reason of distressing consequences that may or may not have been their fault. Upon the promptness with which a communicable disease is recognized depends the outcome, especially is this true of that class of diseases where antitoxin has proven so efficacious. An added responsibility falls to the lot of the physician in these cases by virtue of educating the public in the matter of vaccination that now renders immunity to many diseases that formerly attacked humanity indiscriminately. What are we going to answer the parent who loses a loved one from a disease that could have ben prevented, when asked why we did not tell him the advantages of being rendered immune? These are some of the responsibilities that a doctor must assume, for were it not for knowledge coming from the medical man, what can we expect from other sources? As there is already so much propaganda coming from the camps of the irregular practitioners against vaccination and the use of serums, we must be especially alert to their proper use, so that the results obtained will speak for themselves, for it is a common fault of the public that it does not care to reason for itself, but depends wholly upon what is told and what is seen.

Witness the deplorable situation that befalls many of our state institutions by reason of inadequate facilities. We should keep ourselves informed as to our state hospitals and what they have to offer, and also keep in touch with the people of our community, that we may inform them upon any necessary legislation that warrants their support at the ballot, for it often happens that the institutions suffer by not being voted the proper appropriation to carry on the work through lack of knowledge on the part of the voters, that may be overcome by proper explanation by us physicians to our people.

As physicians we should not neglect to be helpful to each other. This may be accomplished in several ways. Individually, and in groups. By this I mean personally to our fellows and in the working of our medical societies. We should take part in the proceedings and not hesitate to point out where their activities may be improved. One need not be obtrusive to be helpful. We should not let some undesirable member be the means of our staying out, for it is impossible to have any organization 100% pure, and then it is better to have this type of person with us where we can watch him and perhaps reform him, than to leave him without the pale to his own resources.

The full cooperation of each physician is absolutely necessary in order to have a properly functioning Medical Society. If we give the right support to the organization we have a right to expect something from it in return. We should remember that the primary purpose of such an association should be to further the best interest of our profession as a whole, rather than a mutual admiration society to glorify a few. It should be a clearing house of our experiences, whereby a free interchange of opinions may result in better service to those who are sick. It should not exist for the sole purpose of giving employment or station to those who are unable to obtain either upon their merits.

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*Address delivered at the Six County Medical Society July 19 in honor of the celebration of the fiftieth anisversary of practice for Dr. Lincoln Riley of Wisner.

Dr. Riley, the medical profession honors you for your achievements as a man as well as for your attainments in your profession. You have volunteered for service in two wars, and served with distinction and loyalty to your country. You have by reason of your great skill and knowledge piloted the State Rifle squad to the excellent place that it holds. You have been guide, philosopher and friend to your community and to all with whom you have come in contact. Your people speak of you in the highest terms. They are all agreed that you have given them all that you had to give. That you have on many occasions been kinder to them than to yourself. Young and old alike esteem you, for your loyalty and helpfulness. If you have thus endeared yourself to the people with whom you are in contact daily, should we, your fellow physicians, not try to follow in your footsteps? Truly Dr. Riley, you have given us every reason to be proud of you, and I voice the sentiment of every physician in Nebraska who knows you, when I say that "we wish you well, and bespeak for you an uninterrupted long and happy life among your family and friends."

The Treatment of Arthritis

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It is possible to quote literature on almost any form of treatment for arthritis that one can imagine. Most of us have a few brilliant cures that we can boast of, or some bad results which we would like to forget. Sometimes it is hard to keep from getting stampeded into new forms of therapy; and sometimes it is hard to keep from becoming therapeutic nihilists. Some become discouraged by this confusion in methods of treatment of arthritis and emphasize its hopelessness and incurability, and say that no progress is being made. But if we can trust our older confreres, there has been a definite reduction in the amount of crippling arthritis during the past two or three decades.

Recent reports emphasize that the time is not ripe for agreement on systems of classification of joint and pericapsular lesions(1). There is a practical advantage in thinking of arthritis in terms of treatment groups, and we wish to discuss them from this point of view.

Women with mild arthritic pains at or near the menopause represent a fairly charactertistic treatment group. Infectious factors are usually unimportant and at most contribute to the general load. There are seldom focal infections present in the true meaning of Rosenow. Often all these people need is adequate assurance against crippling since their main difficulty is the fear of a progressive arthritis. Often these patients are not leading healthy lives; and the introduction of routines, massage, and more normal diets is all that is necessary. It is often much easier to tell them what to do than to get it done, and for this reason these people are likely to get better results with some non-medical individual than with a physician. Physicians often will not bother with the little details which are necessary. This neglect by the physician swells the cures of the non-medical healers.

In this group, weight reduction is often emphasized, but it seems to us that it is not the loss in weight that counts but the healthful routine. That is, weight reduction accomplished by a moderate amount of exercise, massage, and food restriction is likely to be much more effective than when accomplished by thyroid medication or by simple undernutrition.

Occasionally the recognition of an anacidity helps markedly. Although pituitary and ovarian products are not of value according to Cecil, they cannot be ignored. If tried as a therapeutic test, it should be done by injection to ensure adequate dosage. A good response to salicylates is strong evidence that there is infection present, and in general this group does not get favorable results from the use of salicylates. If one is patient in his history-taking, he will be well repaid in this group. These people often have a hard time telling their stories; but it is an important rule that patients have a right to their symptoms and the privilege of narrating them. It is one of the functions of the physician to hear them and evaluate their pathologic importance.

There is a group of patients with acute periarticular flareups, usually seen in the spring and fall seasons, which should be emphasized. These are usually people with acute pains in back, leg, shoulder, or neck. Many of them still have tonsils and teeth. Although many of these cases are hard to understand as individuals, as a group they are probably respiratory in origin. This does not mean that they have surgically removable foci of infection or even foci of chronic standing. It seems to us that the recognition of their current prevalence helps in understanding them, and confining treatment to conservative measures. Heat, rest and salicylates are important. Where a shortening of the duration of the attack is important, we have evidence that one or two short heatings with a Kettering Hypertherm cabinet at temperatures of 103-104° F. will be of definite value. We think this group brings up the point that there should be a society formed for the conservation of potential sources of infection. Surgery is an unnecessarily drastic method for convincing a patient of the need of rest, or of producing a foreign protein reaction. Besides, this abuse of the principles of infection may be possibly discourteous or even greedy when one considers that a future physician may be in the embarrassing situation of feeling an urgent need for a focus of infection and would greatly appreciate the luxury of something remaining that could be taken out. It seems to us that the recognition of epidemics of joint and pericapsular pains is helpful in conserving "foci." The big danger here is in failing to recognize an acute exacerbation of a chronic arthritis.

Acute rheumatic fever can probably be set apart as a treatment type because of its response to fever producing agents. Sutton and Dodge(2) have shown this for typhoid vaccine and some other fever producing agents, and the results at the University of Nebraska Fever Therapy Department have shown this for physical heat(3). This marked ability to make rheumatic fever patients free from joint symptoms by physical fever therapy does not solve the rheumatic fever question because of the increasing recognition that rheumatic fever often continues at a subclinical level. It is during this period that much of the cardiac damage is done. In addition to rheumatic recurrences and clinical evidence of changes in the heart, the sedimentation rate is being recognized as of great importance in recognizing subclinical activity. Artificial fever will produce relief from joint symptoms, but it will not always produce a normal sedimentation rate. In a few cases the subsequent removal of a pair of infected tonsils has given a normal sedimentation rate. We have limited evidence to show that after the subsidence of joint symptoms by artificial fever, further and prolonged fever therapy does not help in the reduction of the sedimentation rate. The present tendency is to continue the study of cases of rheumatic fever until a normal sedimentation rate is obtained.

The response of gonorrheal arthritis to physical fever has been reported in many places, as well as by us; and failure to obtain relief by this method almost means that the arthritis is not gonorrheal in origin. At the present time it is the method of choice.

This brings up the practical difficulty in recognizing gonorrheal arthritis, a situation in which there is disagreement in diagnosis and the frequency of the disease. Recent studies by Spink and Keefer show the dangers of diagnosis based on clinical study alone(4). Usually gonorrheal arthritis will not respond to salicylates. Often an attack may be precipitated by an upper respiratory infection. X-ray diagnosis and complement fixation tests are often unreliable. The culture of the organism is technically difficult in the small laboratory, and the organism is not uniformly present. Basing the diagnosis on positive gonorrheal smears is often insecure. The use of artificial fever is of definite aid in distinguishing gonorrheal arthritis, and in many cases the use of artificial fever may be the most convenient method of making a diagnosis by therapeutic test.

The one-joint rheumatoid types of arthritis are probably the most grateful form in their response to the removal of foci of infection. These are more often a periarthritis rather than a joint involvement. The delayed flareup emphasized by Bland in his study of rheumatoid exacerbations should be emphasized, and often this delay may be two to four weeks after the acute respiratory or other infectious symptoms (5). Response to local heat, salicylates and rest is fairly uniform. Recalling our society for the conservation of potential foci of infection, it is important to show a sequence of events, remembering that the fact that a patient has a pain and a focus does not mean that they are related. The forgetfulness of some patients is striking until we try to remember symptoms of our own. But often when a patient gets what you are driving at, he will be able to contribute information which is reliable. When the evidence is not sufficiently conclusive, there is rarely harm in further observation to clear up the mechanism. Here it is important for the physician to have access to good massage and heating at moderate cost. If this is not available, these patients frequently get to non-medical healers. There is an urgent need for masseurs and physiotherapists so situated that they can give treatment at a cost which is not prohibitive.

Atrophic arthritis, or chronic infectious arthritis, is the greatest problem of all the types of arthritis. Although the burden of evidence is that it is of infectious origin, treatment along strictly infectious lines is not of great success. The toxicity of the disease is not strikingly apparent and yet there is rapid atrophy and loss of weight. Part of this may be due to the forced inactivity of these patients due to pain. When first seen they are usually underweight and anemic, with contractures well under way. In this stage they often react poorly to surgery in their wound repair. Fever therapy at this stage gives poor reactions so often that we now refuse to give artificial fever until such patients have undergone a short course of hypernutrition.

This is a most embarrassing group as regards our ideas on focal infections. If we are radical focal infection enthusiasts we are likely to go to serious extremes. On the other hand, these people are often demonstrably hypersensitive to toxins, and small amounts of infection can be of great significance. Sometimes it is a luxury to know that dental infections have been cleanly removed and not have to worry about disturbing shadows in the x-rays of the alveolar process. The attitude and skill of the nose and throat specialist becomes of great importance in these cases. If he leans to the too radical side of sinus surgery, one is likely to get drawn into a lot of unnecessary if not disastrous surgery; while if he leans too far the other way, the patient keeps his arthritis. There is no question but that if the nasal accessory sinuses are the background for an arthritis, the cost of cure rises, and the completeness of the result is jeopardized, depending upon the number of sinuses involved. Sometimes we think that the condition of the nose is secondary to the rundown condition of the patient. Much of our focal infection surgery is by nature unclean surgery in that it does not remove a focus but leaves in small portions. The problem of postoperative bleeding and packing in nose work represents a definite handicap in people with poor resistance. If these patients can be built up by hypernutrition and general measures, it is often wise to postpone surgery.

Vaccines come and go, and we continually get new hopes. They cannot be ignored, and yet there is a terrific gap between the beautiful theories of how a vaccine functions and the rarity of a clean clinical result in these cases. A recent review by the American Rheumatic Association practically relegates vaccines to the position of foreign protein reactions. Bacteriologic research, however, is developing new and more potent methods in isolating specific proteins in the respiratory group of diseases. Perhaps as these new laboratory techniques become accessible to the clinician, the vaccine and various immunologic substances may become a dominant factor in treatment of chronic arthritis.

It can be stated as a result of numerous studies that fever production by proteins, sulphur, and various drugs does not differ materially from that produced by physical means alone. This is an important step in that it places all of these methods in essentially the same category. In practice physical fever has the advantages of accurate control and relative freedom from undesirable reactions.

One of the greatest reliefs in these patients is to have one of an agreeable disposition and the mental background to carry through on a program. The addition of a steady, reliable relative, or nursing service, is of great value. Anyone who can set up a routine for getting in nourishment, massage, general care, and psychic tranquillity, along with patience, will get results with chronic arthritis. Some patients are certainly not the right type to have an arthritis, and some of us physicians do not have the patience and attention to minor details to get results with these people. This group includes the patients that the Indian nurse brings back to health, or some fond relative builds up, after the doctor has given up hope. Well-run institutions can often do this work at a reasonable price. A quack can do it provided his quack ideas do not interfere with sound principles of general hygiene. In our limited experience fever therapy plays no decisive role in atrophic arthritis, but often is an added boost in aiding nutrition, promoting circulation, and helping in the release of contractures(6).

It seems to us that often the first problem is to neglect the arthritis and set up the machinery for building up the patient. This does not mean only serving patients attractive foods; the food must get into the stomach. It is surprising how often a high caloric diet gets onto the tray and no further. It is usually necessary to teach the patient relative caloric values and what constitutes a normal diet. This is not difficult and much easier than the training of a diabetic which is accepted practice. If an adequate food intake cannot be maintained, then almost any type of food or vitamin deficiency may develop. It is questionable whether administration of vitamins in the absence of an adequate food intake is sound practice. Occasionally one sees the patient getting so much medication that there is but little room for food. It is a luxury to be able to pass the food problem onto a capable nurse.

We all know the importance of daily massage in these patients, but there are few who get it. Daily massage is often prohibitive; and when a nurse who knows simple massage is not available, it is necessary to train a relative to carry this out. The migratory character of so many chronic arthritics is probably an expression of the incompleteness of the physician's solution of these problems.

For those who are musically inclined, the treatment of atrophic arthritis might be summarized as being like a Passacaglia, such as the one by Bach which Stowkowski has orchestrated so beautifully. The main theme is carried on the foot pedals of the organ throughout the entire composition. The variations and accomplishments come and go on the other keyboards. The main theme is the nutrition, massage and general care carried out without remission. The variations are the focal infections, vaccines, vitamins, radiation, and what Dr. Cutter or Collier's tell us from day to day. Without the main theme, there isn't any tune.

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The Temporomandibular Joint Syndrome

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The dental profession has been interested many years in the changes in the temporomandibular joint occurring in patients with faulty occlusion. Prentiss(1) published a preliminary report on this subject in 1918. The medical profession was slow to realize the importance of pathology in the temporomandibular joint as related to various symptoms about the face, ear, pharynx and tongue. Costen(2) became interested, applied himself to the study of this symptom complex and has done much to bring this important subject to the attention of the medical profession.

Through the interest of a dental practitioner Dr. H. F. McGrane(3) in this subject, Decker(4) who had made the otological examinations on his patients became interested and in 1925 called the attention of the medical profession to the relationship of retrusion of the condyles of the mandible to deafness. The subject appears infrequently in medical literature until Costen revived it in 1934. Through his efforts a definite set of symptoms has been traced to pathology in the temporomandibular joint and the anatomical basis for these symptoms has been made clear.

Costen(5) sets forth what he calls the "Mandibular Joint Syndrome" as follows: (a) intermittent impairment of hearing with a sensation of the ears being stopped, tinnitus and dizziness relieved by inflation of the eustachian tubes. (b) Headaches in the vertex and occiput and deep around the ear and burning sensation in the walls of the throat and in the sides of the tongue and nose. (c) Herpes of the external canal of the ear and buccal mucosa on the side of the neuralgia in 25 per cent of the cases.

Costen thinks these symptoms are due to (a) the erosion of the bone in the floor of the glenoid fossa and impaction of the condyle on this thin area next to the aura, (b) pressure on the auriculo-temporal nerve by the condyle in its loose motion and (c) irritation of the chorda tympani nerve as it passes within the edge of the glenoid fossa.

THE ANATOMY

The complex movements of the temporomandibular joint consisting of not only a hinge-like motion but a gliding motion in both the antero-posterior and lateral planes call for a complex joint structure. (Fig. 1) The joint consists of the glenoid fossa into which fits the condyle of

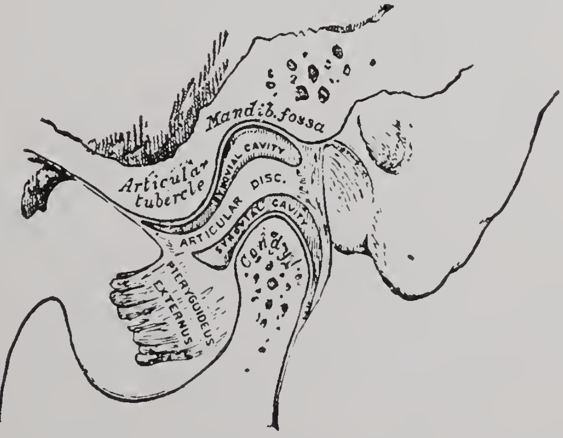

Fig. 1. Schema showing the relationship of the head of the mandibular condyle, the meniscus and the fossa.

the mandible. Not only are these two surfaces covered with cartilage but a movable cartilaginous pad is interposed between them. Thus as the mouth is opened the mandibular condyle glides forward to a position anterior to the glenoid fossa, then as the mouth is closed the condyle glides back into the glenoid fossa with considerable force as the muscles of mastication exert their pull. In cases of malocclusion due to improperly developed or absent molars or in endentulous mouths or mouths where the bite has not been properly restored by artificial dentures the pressure of the condyle is applied too far posterior.

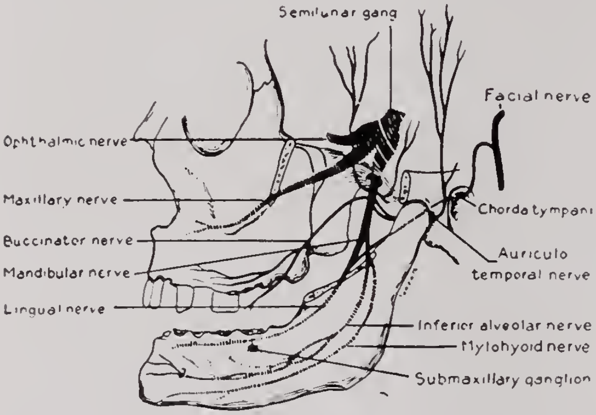

Fig. 2. Schema to show the various areas supplied by the fifth nerve. Reflex pains initiated by irritation of the auriculotemporal and chorda tympani nerves are expressed in these areas. Pain in the tongue occurs along the course of the lingual nerve. Various sensory disturbances arise in the region supplied by the chorda tympani. (after Costen).

The constant hammering of the condyle in this abnormal position results in a pressure atrophy of the posterior aspect of the glenoid fossa and a flattening of the posterior aspect of the convex articular portion of the condyle. As the bone atrophy increases the auriculo-temporal nerve, which passes through the posterior part of the joint, becomes traumatized by the head of the condyle, setting up a neuralgia in the area supplied by this nerve. Irritation of the chorda tympani nerve, which passes within the edge of the joint, causes the pain in the side of the tongue so often of a burning character and very persistent. The sensation caused by irritation of the chorda tympani branch of the seventh sometimes arcs across to the fifth and the pain may be felt in the ophthalmic, maxillary or mandibular branches of the fifth. In this manner too close closure of the mandible, especially in the edentulous mouth, may be the cause of a tic douloreaux.

SYMPTOMS

Costen⁽⁵⁾ reports glossodynia present in ten out of ninety patients examined by him who were found to have destruction and disturbed function of the temporomandibular joint. In some of these the burning sensation was present in the wall of the pharynx also. In another group, reported by the same author⁽⁶⁾, 85 cases out of 125 examined had pain either in the tongue, lateral wall of the pharynx, the region supplied by the auriculotemporal nerve or the fifth nerve.

Thirty-five of this same group had catarrhal deafness and twenty-six had herpes of the buccal mucosa. In patients suffering from tic douloreux due to pathology in the temporomandibular joint, closure of the mouth will usually be the "trigger" setting off the attack, due to the sudden pressure of the mandibular condyle in the eroded area of the glenoid fossa.

DIAGNOSIS

The appearance of the face in profile will often show too close occlusion, especially in edentulous mouths where artificial dentures have been worn a long time without rebasing to compensate for the absorption of the alveolar process. In malocclusion due to absence of some of the molar teeth, the change can only be detected by close examination of the mouth in the open and closed positions.

Dr. McGrane⁽³⁾ called attention to the simple procedure of putting the little finger of each hand in the external auditory canal on each side while the patient opens and closes the mouth. Greater pressure will be noted on the affected side. The same author suggests facial measurements which are quite detailed but helpful in the diagnosis.

Costen has called attention to tenderness elicited by putting the index finger in the mouth and pressing with the tip of the finger firmly against the lateral wall of the pharynx opposite the medial side of the temporomandibular joints. The affected side will be much more tender than the opposite side.

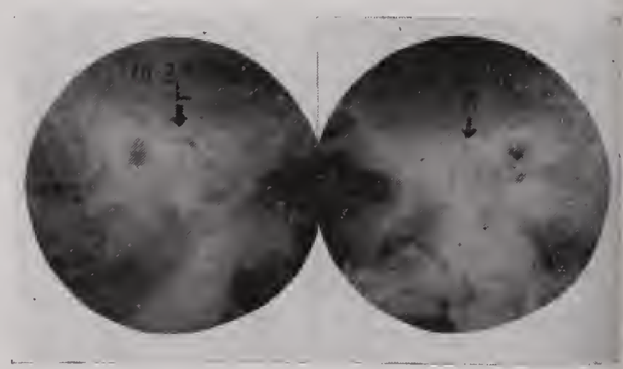

Fig. 3. Radiographs of right and left temporomandibular joints, before treatment, in a patient suffering from right tic dolereaux in which closing the mouth acted as the "trigger." The patient had a bad "overbite" due to absorption of the alveolar process under artificial dentures worn many years without "rebasing." Note the reduced space between condyle and fossa on the right.

X-ray examination is very helpful in determining bone absorption at the point of abnormal pressure or flattening of the condyle of the mandible or narrowing of the intraarticular space due to absorption of the cartilage. To be of value the two sides must be rayed each time in exactly the same position. Scott⁽⁷⁾ recommends the use of a 23° angle board using a small dental cone perpendicular to the table focusing on the joint next to the film at a point one-half inch anterior and one and one-half inches above the external auditory canal next to the x-ray table.

Lindblom⁽⁸⁾ recommends much the same position using a point 20 mm anterior and 60 mm above the external auditory canal of the opposite side. He emphasizes the necessity of making the exposures with the patient sitting erect, the head supported by a rest against the occiput. By this position both sides of the mandible move normally without pressure from the angle board.

Edwin C. Ernst⁽¹¹⁾⁽¹²⁾ has adopted the Bullitt mastoid apparatus to x-ray examination of the temporomandibular joints. For the use of the general radiologist this appartus seems the handiest since it can be kept on a shelf when not in use and can be placed on top of the regular radiographic table when examination of the temporomandibular joints is to be made. It allows absolute accuracy in duplicating the exposure on the two sides and does not distort the joint space by undue pressure on the mandible. With this apparatus the patient lies relaxed on the table with the occiput resting on the base of the Bullitt apparatus (Fig. 5) on which is incorporated a movable part so the head can be slightly elevated or lowered to bring the tragus of the ears level with a cross etched in the transparent celluloid uprights which act as focusing points. The celluloid uprights are covered on the side next to the patient with felt about one-half inch thick which has a circular cut-out over the region of the temporomandibular joint which allows one to see whether the patient is in proper position before the exposures are made. The tube is fixed in an arm pivoted in the base of the apparatus and which is swung, after making the first exposure, from one side to the other where the opposite side is rayed without disturbing the patient. The exposures are made of each side first with the mouth closed, then with the mouth open. It has been our experience that by no other method could we be certain that our angles were exactly the same on the two sides and in no other way could we eliminate the distortion due to pressure on the mandible in the open position.

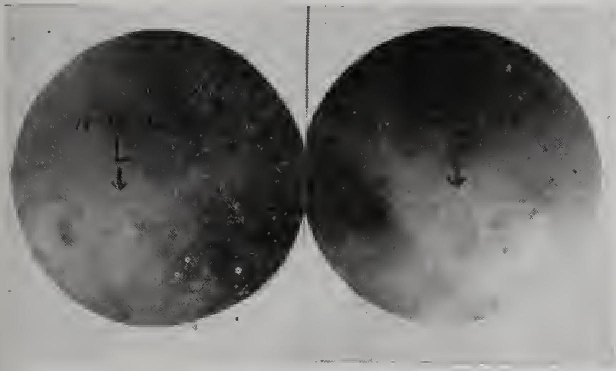

Fig. 4. Radiographs of the right and left temporomandibular joints after correction of the "overbite." Note the increased space between condyle and fossa on the right side as compared with Fig. 3.

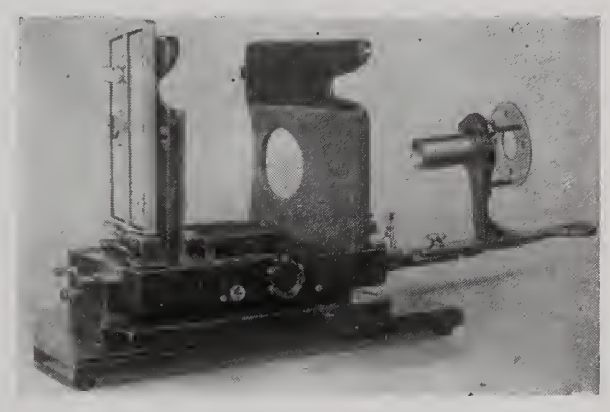

Fig. 5. Photograph of Bullitt apparatus for making radiographs of the temporomandibular joints. The back of the patient's head rests on the base of the apparatus. The cross etched on the celluloid side pieces allows accurate positioning, and the lateral head supports make no pressure on the mandible, and the tube is shifted from one side to the other without disturbing the patient.

TREATMENT

Since the pathology in the temporomandibular joint is due to malocclusion with consequent pressure erosion of the joint surfaces and pressure on the auditory canal, or nerves, restoration of the occlusion to the normal for the particular patient should be sought. This being a dental problem means that the physician should have close cooperation of a dentist who is interested and informed. Operative interference is contraindicated.

Brown⁽¹⁰⁾ in his textbook 1912 stated " - - - - there are many cases on record in which trigeminal neuralgia has been relieved by the insertion of suitable plates to hold edentulous jaws sufficiently apart to keep the condyloid and coronoid processes of the lower jaw in right relation to the surrounding parts."

This suggestion was modified and used as a "Therapeutic test" by Costen who recommends having patients, in whom this condition is suspected, wear cork blocks 5 to 8 mm in thickness between the upper and lower teeth for one week. If this gives relief then permanent dentures are applied. Myers(9) follows the same idea but uses metal caps on the teeth as a test, later fitting permanent dentures. The proper spacing between the mandible and maxilla brings the temporomandibular joint into its proper relationship, thus relieving the trauma to the joint surfaces and surrounding soft tissue structures. Patients with the "temporomandibular syndrome" have usually been in this condition for a long time so that rather extensive changes have occurred in the tissues. The contracted or relaxed tissues and the traumatized nerves heal slowly so one must not expect complete relief from symptoms over night but must be patient, persistent and careful, guiding the patient through a period of months.

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Cancer of the Breast

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FREQUENCY

Considering both sexes, approximately 1 out of 11 deaths from cancer arises in the breast. Over 1/6 of cancer deaths in women arise in the breast. Next to cancer of the uterus, the breast is the commonest source of cancer in women. Ninety-nine per cent of the cases of cancer of the breast are in women and only 1 per cent are in men.

DIAGNOSIS

The important signs and symptoms in the order of frequency are:

1. *Lump*—Every single, apparently solid lump in the breast should be considered carcinoma until excluded by a biopsy. Such a lump is most commonly carcinoma or fibro-adenoma. In an early stage they have the same physical signs. At that stage they are freely movable and not painful or tender. Usually the consistency of cancer is a little harder than that of fibro-adenoma, which has the consistency of very hard rubber. However, even with great skill this difference cannot always be made out. In young women fibro-adenoma is more common, while in older women carcinoma is predominant. However, either one may occur at any time during the reproductive age of women. If the lump has been there for several years without enlarging, it is probably fibro-adenoma. If it is of recent origin and enlarging, it might be either. However, the doctor should not procrastinate. It is by immediate biopsy in this type of case and then, if necessary, immediate operation, that we have the greatest opportunity of getting a permanent cure.

2. *Fixation to skin*—This is most commonly the first positive sign of cancer. Even with this there is a slight possibility of it being a benign lesion. Later on there is dimpling of the skin as the suspensory ligaments of Cooper are involved. As the mass continues to grow, there may be orange peel appearance of the skin and fixation to the chest wall.

3. *Retraction of nipple*—Retraction of the nipple usually means one of the following: (a) congenital condition; (b) a result of previous infection of the breast; or (c) carcinoma. Congenital retraction of the nipple is commonly bilateral and has been there since youth. In the case resulting from infection, there is usually a history of a very sore breast, possibly with an abscess which had to be incised. Such an infec-

tion is most likely to occur during lactation. A carcinoma is usually unilateral, of recent origin and not associated with inflammation or pain. Usually there is a palpable mass.

4. *Palpable axillary glands*—These do not always mean carcinoma, as they may occur with any chronic inflammation. With other positive signs of carcinoma in the breast, palpable axillary glands, especially if quite firm and large, make the diagnosis more certain.

5. *Discharge from the nipple*—A bloody discharge from the nipple usually means a papilloma or duct carcinoma. In either case it should be removed, as papilloma in a very large number of cases later becomes carcinoma. A serous discharge from the nipple with or without the presence of a tumor may indicate carcinoma.

6. *Opacity to transillumination*—Transillumination, by placing a strong light under the breast in a dark room and then looking down through the breast tissue, is of the same help as in the examination of a hydrocele. A cyst containing clear fluid stands out as a light area. A cyst containing milk, pus or blood is opaque. A solid tumor, which is much more common, is also opaque to transillumination. An abscess is usually easy to diagnose because of the signs of acute inflammation. Bleeding into a duct, such as occurs in a papilloma or duct carcinoma, often shows definitely on transillumination.

7. *Metastatic skin nodules*—These are firm red nodules, firmly attached to the skin and elevated a little. They are usually, but not always, multiple and occur in rather active types of carcinoma. There are practically always other signs of carcinoma in cases that have progressed to this stage.

8. *Swelling of the arm*—This symptom often occurs with rather extensive axillary involvement. It is usually quite a late sign but very rarely may be the first complaint.

9. *Distant metastases* — Occasionally distant metastases in the bone may be the first sign of carcinoma of the breast. Every advanced case of carcinoma of the breast should have examination of the lungs, bones and palpation of the liver before deciding upon its operability.

10. *Opacity upon x-ray examination*—A soft x-ray of the breast may be of definite value in diagnosis. However, it is an extra expense to the patient and rarely necessary if the other signs and symptoms are thoroughly investigated.

CLASSIFICATION

1. Scirrhous
2. Medullary
3. Papillary
4. Gelatinous
5. Comedo
6. Paget's disease of the nipple.

The first three types mentioned make up most of the cases.

1. *Scirrhous carcinoma* — This is the most common type and most likely to occur in older women. In it there is an excess of fibrous tissue. It tends to cause an atrophic condition and, therefore, is the type most likely to cause retraction of the nipple and skin. It metastasizes to the axillary glands fairly early.

2. *Medullary carcinoma*—This usually occurs in younger people. If carcinoma occurs during pregnancy or lactation, it is usually of this type. It grows more rapidly and usually enlarges the breast. It sometimes is quite painful, tender and associated with redness, swelling and local heat. This type is often mistaken by inexperienced observers for an inflammation. However, there is usually more of a firmness, often retraction of the nipple and no history of anything to cause an inflammatory condition. During pregnancy and lactation inflammation of the breast is not unusual, a fact which increases the difficulty of diagnosis at this time. If there is a definite lump involving a segment of the breast, a biopsy should be made immediately. Medullary carcinoma metastasizes early and is the most serious and fatal of all the types.

3. *Papillary carcinoma* — This type often arises in a papilloma. It may be associated with bleeding or discharge from the nipple. In spite of growing quite large and ulcerating, it metastasizes relatively late and has a much better prognosis than either of the above types.

4. *Gelatinous carcinoma*—This may be gelatinous degeneration of one of the other types of carcinoma of the breast, or it may be a primary gelatinous growth. In the first case treatment and prognosis are that of the original type of growth. The second type is less malignant, grows more slowly and metastasizes relatively late. A section through the tumor shows a gelatinous appearance, and this is born out by microscopic examination.

5. *Comedo carcinoma* — In this type of carcinoma the ducts are filled with actively growing cells. As it progresses it invades the cells outside of the ducts. It metastasizes late and is relatively benign. However, radical operation should always be done.

6. *Paget's disease of the nipple*—In this there is a raw weeping surface involving the nipple and often the areola. This resembles eczema but does not respond to medical treatment. A lump can usually be felt beneath the nipple. It is unilateral and begins on the surface at the top of the nipple as a scaly infiltrated bright red patch. The nipple is sore, itches, has a burning sensation and may be moist or dry. The base and margins of the lesion are hard, abrupt and well defined. It is a slowly progressive lesion of irregular shape. The nipple later flattens or disappears. The lymph glands are not involved early. There is often a lump deeper in the breast. Paget's cells may be found on scraping the surface. The conditions most commonly confused with it are eczema, syphilis of the nipple and carcinoma of the sebaceous glands of the nipple.

(a) Eczema—This is usually bilateral and in younger people. The nipple retains its shape and prominence. It is intermittent and amenable to treatment. The surface is soft and pliable with no hard margin.

(b) Syphilis of the nipple—This may involve the nipple in either the primary or late stage of syphilis. A rapid growth indicates this. There is no retraction of the nipple. A history of exposure, positive serological test for syphilis and demonstration of spirochetes aid greatly.

(c) Carcinoma of sebaceous glands of the nipple—There are no Paget's cells on scraping.

There are many other fairly good classifications of carcinoma of the breast. Practically, this one works out fairly well; theoretically, it has very definite objections. Some of these subtitles depend upon rapidity of growth and others on origin. As yet, no absolutely satisfactory classification has been suggested.

TREATMENT

The first step is immediate biopsy by local excision, punch or aspiration.

In case carcinoma is found, radical mastectomy is done. This may be preceded or followed by radiation, depending on the type and extent. Not all cases are treated alike. The usual type of biopsy is excision of the tumor. Immediate frozen section is done. If it is benign, the wound is closed. If it is malignant, radical mastectomy is carried out immediately. It is unfair to the patient and the surgeon to remove a lump and send it to a distant laboratory for examination. The delay might be of importance. Also the surgeon who is determining what to do should have the pathology before him. When undecided whether to give preoperative radiation or not, a punch or aspiration biopsy should be used. For a punch biopsy a special instrument devised by the Memorial hospital in New York is commonly used. Aspiration biopsy consists of withdrawing a few tumor cells through a needle, placing them on a glass slide, staining and examining them microscopically. With these two latter methods a great deal of information can be determined regarding the value of subsequent radiation therapy.

At the present time radical mastectomy is generally conceded to be much more effective than radiation in carcinoma of the breast. Therefore, all operable cases should have this operation, usually precided by biopsy. Radiation, when used, should be in conjunction with surgery and not as the sole means of treatment. It is doubtful if external radiation will cure carcinoma of the breast. However, it may prolong life. Therefore, the ultimate permanent cures are pretty much the same whether or not radiation is used in conjunction with radical mastectomy. Especially in medullary carcinoma irradiation will usually prolong life.

Another debated question is whether irradiation should precede operation, should be a postoperative form of treatment or should be used both before and after operation. In medullary carcinoma the immediate results seem to be better if preoperative radiation is used. Preoperative radiation, when used, should be very thorough and then a period of 8 to 10 weeks should elapse before operation is done. Radiation followed in a few days by surgery is ineffective. Unless several weeks have elapsed following adequate radiation, the operative wound will not heal. Postoperative radiation should not be used until the wound is healed.

Inasmuch as the ovaries are found to affect carcinoma of the breast, there has been some debate regarding treatment of the ovaries. Some have gone so far as to advise operative removal of the ovaries or destroying their function by radiation in cases of carcinoma of the breast. With the present state of knowledge, this seems to be too radical. However, in cases of carcinoma of the breast during pregnancy or lactation, this might be advisable. Pregnancy should be terminated immediately upon diagnosing carcinoma of the breast.

METASTASES

Axillary gland—The most frequent location of metastases in carcinoma of the breast is in the axillary glands. If movable, they should be excised; if fixed, palliative radiation is all that can be done. Considerable swelling of the arm may result.

Bone—Bone metastases are also exceedingly frequent. They most commonly involve the bones of the trunk including the vertebrae, ribs, pelvis, clavicles, scapulae, sternum and upper portions of the humeri and femora. They rarely occur below the elbows or knees. These metastases respond exceedingly well to radiation. This commonly stops the pain and the areas recalcify.

Skin—Metastases in the skin near the wound after a radical mastectomy are best prevented by preoperative radiation or excision of a large amount of skin at the operation. If these metastases do occur, they respond fairly well to radiation, especially with radium.

Mediastinum and lung—Probably the commonest termination of recurrent cases is from metastases within the thorax. Irradiation is usually used, but it is not very satisfactory. If there is much hydrothorax, there should be repeated thoracenteses.

Abdomen—Metastases in the liver are not unusual. Also they may occur in the pelvis or in both ovaries, forming bilateral solid tumors. These resemble Krukenberg tumors of the ovaries. There may also be diffuse peritoneal nodules and marked ascites. The treatment is rather unsatisfactory. Paracentesis should be done when neecssary.

Brain—Metastases in the brain have no satisfactory treatment. X-ray therapy may help a little but not much.

PROGNOSIS

Thirty to 40 percent of well treated cases of carcinoma of the breast are cured. In early cases, before there are recognizable metastases, 80 to 85 per cent may be cured by radical mastectomy. If there are metastases to the axilla, only about 20 per cent may be cured. Therefore, again it should be emphasized that early treatment is very essential.

Tubercular Peritonitis

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The patient, Mrs. L. A., aged 24, was referred to me May 5, 1918, complaining of "stomach trouble."

P.H. There was no history of tuberculosis in the family or among associates. Since the age of 15 the patient has had considerable lung trouble, at times raising blood. Her menstrual life began at 16. There was no pain or disturbance. She was married at 22. Has given birth to one baby which was weaned from the breast eight weeks ago. The baby was very anaemic at birth but has been improving rapidly since taken from the breast. Since birth of the baby the patient has had no trouble with her lungs.

P.I. Six months ago the patient first noticed pains in the right abdomen, worse at night. She began to feel weak. Started to bloat, especially on the right side, and became constipated. Soon the pain became general over the abdomen and she noticed dark blood in the feces periodically. At times felt feverish, appetite became poor, has lost weight and constipation is getting worse. During the past three weeks she has been confined to bed and running considerable temperature.

Examination at the hospital. Patient emaciated and weak. Head and throat negative. Thorax prolonged expiration right apex, no rales. Heart negative S.B.P. 95. Abdomen distended. Several prominent bossae and much borborygmus. Rather marked tenderness general over the abdomen; more exaggerated lower right abdomen. No ascites could be recognized. Vaginal—very tender about parametrium. Rectum—dilated and tender. Blood—Hb. 75%, W.B.C. 10300. Urine—trace of albumen with few casts and epi cells. During two days of observation the temperature returned to normal and then rose to 110.2 F.

Diagnosis. Tuberculosis peritonitis.

Operation May 8, 1918. Mid-line incision. The abdomen was studded everywhere with large inflammatory tubercles the size of a small pea. Numerous adhesions between the visceral and parietal peritoneum, mass region of cecum. Straw-colored fluid in pelvis. Patient's condition became bad, a tube was placed in the pelvis and abdomen closed. Tube removed following day and patient returned home on the twelfth day.

November 4, 1918—Patient returns, saying she has improved in health and gained twenty pounds. Menses became normal after her return home. Last period September 19, 1918, thinks she is pregnant. Appetite poor, no cough.

Examination. Heart and lungs O.K. Abdomen—several T.B. sinuses through stitch holes along scar. Right kidney palpable. Tender over appendix. Vaginal—very tender. Cervix soft. Fundus not felt because of muscle spasms. Right tubal region very tender. Urine negative.

Operation November 6, 1918. Dilitation of cervix. Fundus dilated and apparently empty. No membranes with curettage. Iodoform pack. Excision abdominal scar, very few adhesions. Appendix in mass of light adhesions removed. Both tubes and left ovary removed. Uterus resembles a pregnant organ. Numerous small white tubercles over intestinal coils and pelvic adnexa. Induration cecum at base of appendix. Excision of skin sinus and wound closed without drainage. Patient returned home in two weeks. Temperature and pulse normal and is alive and well at this time (1932).

COMMENT

From the history of this case it is probable that the primary focus was the lung. At the time of the first operation we were undoubtedly dealing with an acute exacerbation of the peritonitis because of the character of the tubercles. Upon her return in the autumn (six months later) the interesting phase was the symptoms and signs of pregnancy without pregnancy being present. Another interesting point was the disappearance of abdominal adhesions since the first operation.

Tuberculous peritonitis is one of the most interesting of abdominal conditions and one which tests the judgment of the surgeon if results are to be satisfactory. The case cited here was one of my earliest cases, and from it I built the therapy which has been used successfully in later experience. Exposure to light and air has in my opinion a definite beneficial effect. If the adhesions are extensive and it is difficult to reach the appendix and tubes without trauma, it is best to be satisfied for the time being with the exploration. Drainage should never be used in these cases because of the danger of sinus formation and of secondary infections. In the interim between the first and second operation expectant treatment such as tonics properly balanced diet should be used. One of the most important adjuncts to therapy is exposure of the patient in the nude to the rays of the sun. At the second operation it is usually startling to note the changed intra-abdominal picture. Adhesions have disappeared, inaccessible regions have become accessible and the necessary surgery is simple. Early recognition and proper handling of these cases is productive of satisfactory results in the majority of cases.

Diagnosis and Treatment of Ectopic Pregnancy

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Since tubal pregnancy with an occasional abdominal pregnancy comprises the bulk of ectopic gestations this discussion will be confined to those two forms. In order to properly visualize the pathology of tubal pregnancy with its resultant symptomatology several factors must be recalled to mind.

Normal impregnation of the ovum takes place in the tubal ampulla. In tubal pregnancy some condition retards its passage down the tube, the ovum retaining its imbedded properties irrespective of its location. The tubal mucosa does not form a thick decidua to protect its musculature and the tubal walls fail to undergo sufficient hypertrophy to accommodate the enlarging egg.

Since the ovum depends entirely upon the tube for its downward passage any impairment of the tubal activity or distortion of its lumen may act as a barrier to the advancement of the fertilized egg. Tumors, adhesions of the perisalpinx, malformations, loss of cilia—all may be factors in this respect.

Falk(1) has shown that follicular salpingitis following mild endosalpingitis is found in 90% of tubal pregnancies. It is his belief that the tubal labryinth formed by adhesions between the tips of the tubal folds is a potent factor in the arrest of the fecundated ovum. In a later report(2) his studies indicate that nidation takes place either by invasion of the tubal wall with eccentric displacement of the lumen or by growth of the ovum with the major portion extending towards the tubal lumen. He refers to the former as the mural type and the latter as the luminal type of imbedding and asserts that combinations of the two are frequent.

After nidation, due to lack of proper decidual reaction, the invasion of the trophoblast produces uncontrolled hemorrhage which results in partial separation of the attached ovum. The lumen of the tube may be filled with blood, some of which may find its way into the uterine cavity. The intratubal bleeding may also flow through the tubal ostium producing the characteristic symptomatology of peritoneal irritation. At times the entire ovum becomes detached and lying free in the lumen is discharged through the fimbriated end as a tubal abortion.

In other cases the ovum remains attached and continues to invade the tubal wall until the trophoblastic cells lie just beneath the serosa. Erosion by the invading chorinonic villi is conceded to be the primary factor in tubal rupture with its attendant, intraperitoneal hemorrhage. Complete separation of the ovum from its attachment, with fetal death, is the usual result.

Occasionally, however, the attachment is not completely severed by the hemorrhage and continued growth occurs. The oval sac is extruded through the rent in the tube or through the fimbriated extremity and proceeds to develop as an abdominal pregnancy. The placental attachment may prove to be a serious problem in the surgical treatment of this condition.

In ectopic pregnancy, aside from the missed period, the patient remains symptom free as long as no intrabutal hemorrhage occurs. Sudden distention of the tube by blood or the occurrence of intraperitoneal bleeding initiates a chain of symptoms which is fairly typical. With the initial hemorrhage there occurs sharp pain in the adnexal region accompanied by varying degrees of shock. This is followed shortly by the appearance at the vulva of a small amount of dark bloody discharge. The source of this blood is probably the uterine decidua undergoing retrogression as a result of the separation of the fetal attachment in the tube. Falk(2), however, believes that in some instances blood from the site of the tubal gestation may escape through the interstitial portion of the tube and be discharged through the uterine cavity. If the first hemorrhage is mild and especially if there be no intraperitoneal bleeding, the symptoms rapidly subside and may easily be confused with those of an early intrauterine abortion. Each succeeding attack, however, increases in severity until intraperitoneal bleeding occurrs as the result of rupture or tubal abortion. Such a crisis precipitates an alarming picture—severe pain, shock, fall in blood pressure, rapid pulse, pallor and at times air hunger. One fairly constant symptom is extreme pain in the rectum due to irritation of its serous coat by the blood in the cul-de-sac. Pelvic examination at this time, should it be necessary to confirm the diagnosis, discloses the characteristic uterine changes of early pregnancy. There is also extreme pain on manipulation of the uterus and adnexa. There is usually felt an indefinite doughy mass in the adnexal region. The cul-de-sac may be distended by hematocele. Needling of this area is rarely necessary as a diagnostic measure. Leukocytosis is the rule, the count varying between 10,000 and 20,000. The Friedman reaction is usually positive but a negative report does not exclude the presence of an ectopic since the fetus may be completely detached.

Approximately 70% of tubal pregnancies that come to operation are correctly diagnosed. Confusion most often occurs in differentiating them from intra-uterine abortion, pedunculated pelvic tumor with twist of the pedicle or ruptured hemorrhagic corpus luteum cyst. Uterine abortion characterized by rhythmical uterine contractions, relatively increased vaginal bleeding and the expulsion of fetal products should be easily differentiated, but ectopic gestation is probably most often confused with this condition.

The possibility of co-existing intra-uterine and extra-uterine pregnancy should not be overlooked.

Pelvic tumor with twisted pedicle is not preceded by ammenorrhoea nor accompanied by the spotting type of vaginal bleeding. Examination discloses the definitely circumscribed, firm, tender, tumor mass.

Since rupture of a hemorrhagic corpus luteum cyst results in intraperitoneal bleeding, the immediate clinical picture may closely resemble a ruptured ectopic pregnancy with mild hemorrhage. Hemorrhagic corpus luteum cyst occurs in the late premenstruum and is not preceded by a period of ammenorrhoea. The immediate symptoms are less severe and are soon followed by an apparently normal period. The Friedman reaction is negative. The attack does not recur during the same menstrual cycle.

Obviously the treatment of a bleeding tubal pregnancy is control of the hemorrhage. The immediate resort to laparatomy in a patient in shock greatly increases the surgical risk. Measures to improve her condition should be instituted. She should remain flat in bed unless syncope requires moderate elevation of the foot. Exaggerated elevation should not be employed. A firm binder over thick layers of cotton will comprress the abdominal contents against the pelvic brim and favor control of hemorrhage. Morphine should be freely used to allay restlessness. After the above precautions the patient can usually be transported but should be kept in the flat position. Hospitalization is desirable as soon as possible. Fluids by hypodermoclysis speed the immediate recovery. A suitable donor should be secured but transfusion or intravenous fluids are best withheld until the bleeding point is secured. The sudden increase in intravascular pressure may aggravate the bleeding.

Repeated observations of the blood pressure is a valuable method of determining the opportune time for operation. When the pressure shows a definite return towards normal the patient may be considered a suitable risk. Operation should not be delayed with the hope of the blood pressure returning to its former level since such increase may be accompanied by a recurrence of the hemorrhage temporarily under control. For the same reason the routine use of stimulants is contraindicated.

An occasional case, less than 5% of the total, with a massive hemorrhage, will fail to show improvement after a reasonable period of treatment and observation. Such patients should be immediately laparotomized and transfusion started when the incision is made.

Auto-hemofusion, the intravenous introduction of citrated blood from the peritoneal cavity, can be imployed in serious cases where a donor is not available. It does, however, carry a little greater risk of reaction and should not be used routinely. The pathology encountered usually requires removal of the affected tube; inspection of the opposite adnexa should not be overlooked since bilateral ectopic pregnancy does occur. If the opposite tube is macroscopically normal it should be left in situ.

Available statisucs indicate that 6% of the cases in which the opposite tube is left subsequently develop an ectopic in the remaining tube. Normal intrauterine pregnancy, however, occurs in 16% of these same groups, justifying the conservative operative treatment. The urge to perform prophylactic appendectomy at the same time should be firmly resisted, as it greatly increases the risk of postoperative peritonitis. This is probably due to the lowered phagocytic powers of the endothelial cells plus the excellent culture media furnished by the free blood.

Abdominal pregnancy, while an infrequent occurrence, may present a serious problem in the removal of the placenta. As the ovum continues to grow, following its gradual extrusion from the tube, the chorionic villi invade adjacent structures to form the developing placenta. Attempts at separation of the placenta produce profuse uncontrollable hemorrhage. Removal of these secundines requires excision of the tissues to which they are attached. This, when possible, is the preferable treatment.

Quite frequently, tissues are involved that do not lend themselves readily to extirpation. When such a condition is encountered, the cord may be tied short and the abdomen closed or the fetal membranes may be sutured to the edges of the wound and the cavity thus formed, packed with gauze. The placenta, in the latter treatment, loosens gradually and is expelled through the resultant sinus. Laparotomy, on a living abdominal pregnancy, should be performed shortly before term, as fetal death occurs fairly soon after term is reached. Postoperative treatment is largely routine. If recovery from the postoperative reaction is uneventful, the convalescence is usually smooth.

Abdominal distention is a common occurrence and should be treated by the nasal tube and suction and Pitressin. Enemas and laxatives should be withheld until definite return of intestinal tone has occurred.

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MASSIVE ATELECTASIS FOLLOWING CYCLOPROPANE ANESTHESIA: REPORT OF CASES AND THEORY OF CAUSE AND PREVENTION

During the last two years Oswald R. Jones and George Edgar Burford, New York (*Journal A. M. A.*, April 2, 1938), observed four deaths following quickly after the administration of cyclopropane. Necropsy, when performed, showed massive atelectasis of one or both lungs. Futhermore, pulmonary complications following long-continued cyclopropane anesthesia, especially for operation on the stomach, have increased more than should be expected over the otherwise low incidence of such complications following the administration of cyclopropane. With full knowledge of the value of cyclopropane, they propose a suggestion both for avoiding the rare tragedy of massive atelectasis and for reducing the already low figures for postoperative morbidity associated with this type of anesthesia. Consideration of the physical conditions surrounding the administration of cyclopropane shows that, with occasional minor failures in technic, the development of massive atelectasis during the actual administration, with or without the presence of bronchial plug considered so typical of this condition, is at least a possibility. During the course of an operation, as a result of various maneuvers, the content of the bag may be partly lost two or three times. Each loss represents a further dilution of the inert gas (nitrogen) content of the bag both by direct loss of nitrogen and by reduction of the remaining percentage through refilling with quickly absorbable oxygen and cyclopropane. Toward the end of an operation the patient may be breathing an atmosphere made up almost entirely of rapidly absorbable gases, the inert gases having been lost during the anesthesia. When the alveoli of the lungs have lost the supporting properties of the inert gas nitrogen, conditions are present which favor atelectasis. If their speculation as to the cause of this type of postoperative massive collapse is correct, the obvious remedy that suggests itself to the authors is to add inert gas to the cyclopropane mixture. For the purpose of preventing atelectasis, the addition of nitrogen would be effective. The most useful addition to the cyclopropane atmosphere or other anesthetic atmospheres should be either hydrogen or helium. Both these gases, besides having more prolonged rates of absorption by the lung than nitrogen, have the added mechanical advantages for respiratory purposes inherent in light gases. It is well to watch for any sign of cyanosis after these additions. Any additions of helium after the first one should be consideraby reduced in amount.

Treatment of Emergencies in Ear, Nose, and Throat*

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I should like to review briefly those conditions of the ear, nose and throat which are first brought to the attention of the men engaged in the practice of general medicine, and which must be treated by them either immediately, or before the aid of a specialist can be procured.

No more important emergencies exist in medicine than severe hemorrhage from the nose or throat, or acute laryngeal obstruction. Every man practicing medicine, regardless of his specialty, should feel confident in his ability to deal with these conditions.

Nasal hemorrhage may vary from the mild cases of blood-tinged nasal secretions to the severe hemorrhage encountered from the sphenopalatine artery which may lead to exsanguination and exitus in ten to fifteen minutes.

Daily nosebleeds, even though slight, if continued over a period of several weeks, rapidly lead to secondary anemia, especially in children. Such areas are usually confined to the anterior portion of the nasal septum or the anterior end of the lower turbinate. A pledget of cotton dipped, but wrung out, in a solution of equal parts of cocaine 5%, and adrenlin 1:1000 is applied to the bleeding area and allowed to remain in place for five minutes. The area is now touched lightly with a chromic acid, or trichloracetic acid. Vaseline or borofax is applied liberally, and the patient is instructed to use one per cent tannic acid in lanolin as a local application two or three times a day for the following week. Mild epistaxis usually responds readily to this treatment.

Extensive bleeding from the anterior ethmoidal arteries will usually require the use of nasal packing, while the hemorrhage is so profuse as to eliminate the possibility of locating the bleeding vessel. With the patient in the sitting position, the nose may be packed in several ways. A Simpson splint, consisting of several layers of gauze and cotton, finely pressed together is inserted in the involved side. The moisture quickly causes a swelling of the splint to about four or five times its normal thickness. This will many times cause sufficient pressure to occlude the bleeding vessel.

In packing a nose, one-fourth to one-half inch vaseline gauze packing is the most satisfactory. The upper straits of the nose should be packed first, so as to prevent the packing from passing into the nasophynx. It is frequently possible to pack as much as three to four yards of packing into one side of the nose. Packing should be renewed in 24 hours, or sinus or middle ear complications may result if the packing is allowed to remain a longer time.

If packing the nose anteriorly is insufficient, it will be necessary to resort to the use of a post-nasal plug. This is the case if the artery involved is the sphenopalatine artery, a large artery on the interior sphenoidal wall. The post-nasal plug is made up of gauze in the shape of a cylinder about ½ to ¾ inches in diameter and about 1½ inches in length. It should be firm and have three strings attached, one near each end and another in the center.

A catheter is passed along the floor of the nose and brought out through the nose. This is repeated on the second side and the two strings are tied in front of the nose after the pack is pulled into the nasopharynx. The third string comes out of the mouth for removal of the pack. The pack is held more firmly than if only one string is brought through the nose. The affected side is now firmly packed anteriorly. This method will control epistaxis of the most severe type. The entire blood supply of the nose is from the external carotid artery and certainly it would be more expedient to tie the external carotid artery than to allow continued bleeding. In the acute emergency the value of thromboplastic substances, the use of ice packs, etc., is nil.

While on the subject of hemorrhage, I would like to mention a few points which may be of use to some of you in the control of postoperative tonsil and adenoid hemorrhage. In a tonsil hemorrhage, the method of choice is the removal of the clot, location of the bleeding vessel and ligative. If the bleeding is moderate, the use of a pack covered with a mixture of Monsel's solution, drams two to one ounce of lanolin, may be sufficient. The use of Monsel's solution undiluted is condemned, as the caustic action results in extremely painful dysphagia.

The control of adenoid hemorrhage is more difficult. A child who, following removal of tonsils and adenoids, appears pale, with cold clammy skin, rapid respiration and thready pulse and continued swallowing, is bleeding and immediate action is required. The use of a post-nasal pack in the manner described above, is the method of choice in the control of adenoid bleeding in children. In the adult, post-nasal packing may be necessary, although the use of adrenlin 1:1000 dropped into the nostrils may be sufficient.

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*Read before the Omaha-Midwest Clinical Society, October, 1937.

The Yankauer nasal speculum may be very useful in the control of adenoid hemorrhage, especially in the adult. The bleeding areas may be located and caustic agents can be applied directly to the bleeding vessels.

Another condition which I should like to classify under an emergency condition is the fractured nose. Although it does not actually threaten life, it may lead to dire effects if not handled immediately. A fracture of the nasal bones may lead to external deformities, or may cause obstruction to breathing and to improper ventilation of the sinuses and the Eustachion tube.

Fractures of the nose involve the nasal bones, the ascending process of the superior maxilla or both. The nasal septum is usually deflected at the same time. A fractured nose, if neglected for more than 24 to 48 hours may require extensive nasal surgery.

The diagnosis is easy. Crepitation can usually be felt, and there is a depression of the nasal bones of one side. The nose is sprayed or packed with a solution consisting of cocaine (10%), 2 parts, and adrenalin 1:1000 (1) part. An elevator, or a tonsil dissector is inserted into a piece of rubber tubing, and introduced along the septum of the nose and advanced to a position underlying the nasal bones. The depressed bones are elevated until the normal shape of the nose is obtained. That side of the nose is then packed with a rubber finger not filled with gauze packing, and allowed to remain in place for 48 hours. The nasal septum will return to its former place by this means of reduction. The patient is cautioned against subsequent trauma for at least two weeks. 95% of nasal fractures may be handled in this manner. External splints are not required.

Acute Laryngeal obstruction is a condition which calls for immediate action. Dyspnea is serious, especially in children and young infants, and should be relieved early regardless of the cause. Watchful waiting in instances of exhaustive dyspnea is extremely radical treatment. Dyspnea, especially in a child, early leads to physical and cardiac exhaustion which may cause death before the obstruction is relieved.

I wish to make a plea for early tracheotomy in acute laryngal obstruction. As a therapeutic measure, tracheotomy has been definitely established. The immediate results of few surgical procedures are more gratifying than those following tracheotomy. The technic for a tracheotomy is relatively simple, and the complications are rare.

Before describing the method for the performance of a tracheotomy, I should like to point out the syndrome of acute laryngeal obstruction.

We should no longer diagnose any condition as croup. Croup is a term which has become obsolete and has become the pitfall of too many physicians. Laryngeal obstruction is recognized by the distinct effort that the patient makes to breathe. The cardinal signs are in drawing at the supra-sternal notch, in the supra-clavicular fossa, in the intercostal spaces and at the epigastrium.

Restlessness is always present and usually leads to exhaustion. Cyanosis is a dangerously late symptom and may be entirely absent in children. When cyanosis appears the chances for life are very poor. One should never wait until the child becomes blue before relieving the obstruction.

There are no contra-indications to tracheotomy for the relief of dyspnea. A pillow is placed under the shoulder of the patient, the head is extended, the chin being kept directly in the midline. Infiltration of the skin with novocaine renders the operation painless. A midline incision dividing the skin and faseia is made for a distance of from 3-4 cm.

The ribbon muscles of the neck are easily separated by blunt dissection. The isthmus of the thyroid gland is either raised or sectioned, an undue amount of respect for the gland being unnecessary.

The trachea is opened from below upward through the third and fourth rings. A hemostat is placed into the trachea and the trachea wound is dialated permitting a cannula to be passed. In this area one need have no fear of large vessels. The use of a general anaesthetic is a dangerous procedure and should never be employed. The operation presents no technical difficulties and it is always more conservative to perform an early tracheatomy than a late one. No patient should be allowed to die of mechanical laryngeal obstruction under the eye of any physician.

Three nonagenarian brothers of California attribute their longevity to abstinence from liquor, tea and salt; and if that isn't treason to sunshine it's a novelty in California publicity.—*Philadelphia Evening Bulletin.*

Insulin-Shock Therapy of Schizophrenia

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It is not the purpose of this paper to present any theories or to attempt to make any scientific explanations concerning the effect of insulin hypoglycemic shock treatment of schizophrenia, or dementia praecox, as described by Sakel(1). We are interested in determining what effect this form of treatment has on patients who are committed to or confined in state hospitals. The majority of schizophrenic patients admitted to state institutions are not acute, that is with symptoms of less than six months or even one year. Disabling symptoms may not be present for long, but personality changes may have occurred over a longer period of time, indicating that the schizophrenic process has been present. It is difficult to evaluate results because spontaneous remissions do occur and this has been estimated to vary from 15% to 25%. Also, in our group, shock treatment was not used alone, but was combined with occupational therapy, recreational therapy and in some cases psychotherapy.

CASE MATERIAL

During the past fifteen months we have treated in the Hastings State Hospital sixty cases of which forty have been completed. Of the forty cases completed there are twenty-one males ranging in ages from 16 to 35 years and 19 females ranging in ages from 18 to 56 years. There are 39 cases of schizophrenia, all types being represented, and 1 case of manic depressive psychosis, manic type. Nine cases, 5 males and 4 females, had symptoms of a duration of less than 1 year. Eleven cases, 4 males and 7 females, had symptoms ranging from 1 to 2 years. Four cases, 1 male and 3 females, presented symptoms from two to three years. Three males had symptoms from 3 to 5 years. Twelve cases, 7 males and 5 females, showed symptoms ranging from 5 to 10 years. However, of these 12 cases, 5 have been hospitalized for at least 5 years; three had been previously hospitalized, but improved so they could be dismissed; and four cases, although showing psychotic symptoms from 6 to 8 years, were able to remain out of the hospital until within the past year. It is obvious that no attempt was made to select only cases in which the prognosis seemed good, but rather a wide variety of cases was selected.

TECHNIC

The fasting patient is started on from 15 to 60 units of insulin intramuscularly at 6:00 a. m. The initial dose is dependent upon the physical condition of the patient and the nature of the psychosis. A paranoid patient in good physical condition is generally started on a larger dose in order to produce shock as soon as possible. In a stuporous patient the dose is small and raised more slowly in order to prolong the excitement period which appears to be beneficial in these cases. The dosage is generally raised from 5 to 20 units. The dosage is increased until coma occurs. In our series of cases this has varied from 20 to 350 units. After the patient has gone into coma a few times, the dose may be greatly reduced, and in a few cases it has been reduced to 40% of the original shock dose. However, in some cases the dose has had to be increased. This seemed to occur oftener in women than in men. From four to five hours after the injection of insulin or after the patient has been in coma from 15 minutes to 1½ hours, the hypoglycemic state is terminated by either intravenous glucose or administration of sugar by nasal gavage. Most of the patients, and particularly those receiving the larger doses of insulin, are given additional carbohydrates during the afternoon. Thus, the possibility of a secondary shock is lessened. The treatment is carried out from four to six times a week. The total number of shocks given to patients in our series has ranged from 12 to 100 shocks. A patient showing no mental improvement was not discontinued, his physical condition permitting, until he had at least 50 to 60 shocks. After the shock phase of the treatment was completed, the patient was given small doses of insulin, 10 to 30 units b.i.d., or t.i.d., for several weeks or a month. In cases showing no improvement, this was not done.

Several hours after the injection of the insulin, the patient begins to perspire, which later becomes profuse. Occasionally perspiration is only slight or absent, and this is spoken of as a "dry shock." There is a marked lowering of body temperature and readings of 93° to 95° F are not uncommon. At first temperatures were taken every fifteen minutes, but now are taken just before the insulin is given, and then not again until after the treatment is completed, unless the patient is not doing well. There is generally a marked salivation and for this reason, aspiration pneumonia is a constant danger in a comatose patient. At the end of two or three hours some of the patients pass through a period of excitement which may last only a short time and then the patient goes into coma, or at times, the excitement persists or becomes more marked and termination is necessary. The period of excitement is usually not permitted to remain over thirty minutes, even in a stuporous patient in whom it appears to be of most value. Muscular twitching of the face and limbs are not uncommon. At times, these twitchings become more and more severe and result in a convulsion. Although convulsions have not been frequent in our series, they do occur from time to time. The corneal reflexes are nearly always absent in a patient in coma. Deep reflexes may be hyperactive or unequal, and a positive Babinski sign occurs rather frequently.

It is recognized that the treatment is not without dangers⁽²⁾ and fatalities have been reported. Secondary shocks, circulatory collapses, and aspiration pneumonia are some of the complications that must be guarded against. An occasional secondary shock or rather severe circulatory collapses have been encountered by us, but to date there have been no fatalities.

In tabulating our results as in Table I we determined the degree of remission of each case in the following manner: (1) Complete Remission. (2) Marked Improvement with patient able to make satisfactory home adjustment. (3) Partial remission—improvement, but patient still in need of further hospitalization. (4) No improvement. The four criteria for complete remission are as follows: (a) Complete disappearance of psychotic symptoms. (b) Restoration of adequate emotional response. (c) Some insight into the past illness, and (d) Full capacity for return to former work. If any of the preceding requirements were lacking, the patient was not considered in complete remission, but this did not preclude the actuality or possibility of the patient making a satisfactory social adjustment.

TABLE I

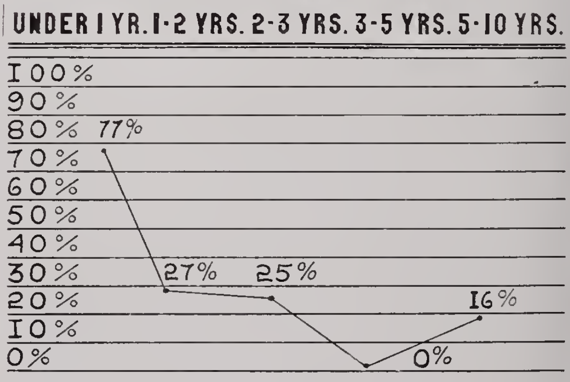
DEGREE OF REMISSION

	Under 1 yr.		1-2 yrs.		2-3 yrs.		3-5 yrs.		5-10 yrs.	
	Male	Fem.	Male	Fem.	Male	Fem.	Male	Fem.	Male	Fem.
Total	5	4	4	7	1	3	3	0	7	5
Remission	2	3	..	1	..	..	..	..	..	..
Marked Improvement	2	..	1	1	1	..	..	..	2	..
Partial Remission	1	..	1	1	..	1	2	..	2	3
No Improvement	..	1	2	4	..	2	1	..	3	2

There was one case of manic-depressive psychosis, manic type, in a male who made a complete recovery. The remaining 39 cases were schizophrenia, all types being represented, but the catatonic and paranoid types predominating. Of the nine cases of less than one year's duration, eight were catatonics. Of the five male cases with a duration of less than one year, two are in a state of complete remission, two improved and at home, and one improved and making a good hospital adjustment. Of the four female cases of less than one year's duration, three are in a state of complete remission and one unimproved. There were eleven patients who had symptoms varying from one to two years. Of the four males, only one showed marked improvement and is adjusting well at home; one other is improved, but hospitalized, and two unimproved. Of the seven females, one has a complete remission, one is moderately improved and at home, one improved but in the hospital and four unimproved. In this group with symptoms ranging from one to two years only three of the eleven or 27% responded well enough to the treatment in order to leave the hospital as compared to 77% of those with less than one year's duration of symptoms. (See Table II). Of the four patients with symptoms from two to three years, only one, a male, showed marked improvement and returned home, but had a relapse after six months and had to be returned to the hospital. One female is making a better institutional adjustment, and two are unimproved. There were three males with duration of symptoms from three to four years. There has been no remarkable change except for a somewhat better institutional adjustment in two of the cases. There were twelve cases, seven males and five females, who have had mental symptoms from five to ten years. Of this group, two male patients showed some improvement and are at home at the insistence of the families. Their improvement was no greater than most of those showing improvement, but still requiring hospital care. Both of these patients show psychotic manifestations, but appear to be less dominated by their abnormal mental trends. It is interesting to note that both of these cases had mental symptoms from six to eight years, but were able to remain out of the hospital until within the past year. Two other

TABLE II

IMPROVEMENT VS DURATION



male patients improved to the point of making a better institutional adjustment. One was later given Metrazol, cleared up and is now making a good adjustment at home. Four were unimproved. Of the five females, three are making a somewhat better institutional adjustment, and two are unimproved.

The attitude that has been taken by the patients, who are recovered or have shown marked improvement, is of interest. The majority have a friendly attitude toward the hospital and several have visited here a time or two since leaving and others have written to the physicians or nurses. It appears to us that the attitude towards the hospital and toward life of the successfully treated shock patient is better than that of a patient having a spontaneous remission(3).

The importance of early diagnosis is obvious. The response to therapy is much greater in the recent cases, particularly those having a duration of symptoms of less than one year. The onset of this disorder is frequently insidious and some of the cases are not recognized as mental cases until the disease process has gone on for some time. An early sign is a growing indifference on the part of the patient. He becomes more seclusive, prefers to remain at home, does not care to associate with other individuals and loses interest in his surroundings. He may develop ideas of reference, become suspicious of people, think people notice him, talk about him or interfere with his plans. Often these individuals are merely considered queer and not thought of as psychotic until well-defined delusions or hallucinations appear. By that time, the best opportunity for any form of therapy is past. The paranoid type of schizophrenia, which in early cases has given promising results in other clinics, has given us disappointing results because most of the cases that come to us are of at least several years' duration. Since the onset is usually insidious, and they are able to make a limited adjustment in the community, they are kept at home; and only when their ideas of persecution become too great is hospitalization resorted to. Catatonics, on the other hand, are frequently committed rather early because the onset is more rapid and the family find that it becomes more and more difficult to care for them.

In closing we wish to state that the results of hypoglycemic treatment of early cases of schizophrenia are encouraging. If complete remission is not obtained, there is marked improvement in the psychotic symptoms in a good percentage of the cases which makes it possible for those individuals to make a better social adjustment. However, it is realized that considerable period of time must pass before the treatment can be thoroughly evaluated.

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SOCIAL MALADJUSTMENT

"Mother, may I go out to play?"

"No, darling, it's damp out; you'd catch your death of cold!"

"Well, Johnny Jones is out playing. And so is Pete Brown and Jerry Smith and everybody."

"Now, sweetheart, you know I don't care what those rowdy children do. In fact, I'd rather you didn't play with them at all."

And so the precious little lamb is kept from other children and is on the road to becoming a "lone wolf," as Richard Fechheimer shows in his article "Animal Story for Parents" in the April issue of *Hygeia.*

Such a child has no chance to learn, in the cruel school of childhood's social life, the give-and-take that is so necessary a training for the exacting, if perhaps less cruel, social life of adults. He learns no technic of making and holdinng friends. He is even kept ignorant of the pleasures of friendship.

Thus when he is finally forced to enter a more complete social life, the adjustment is difficult. People demand so much—so many concessions and compromises! It scarcely seems worth the effort to be pleasant to people. Unused to the impact of other personalities on his own, the precious lamb bruises too easily, fancies too many slights and injuries. In a natural course he goes on being the lone wolf his mother trained him to be!

The inability to get along with others grows from some early maladjustment that warped the personality or that perverted the normal outlook. Sometimes, of course, that maladjustment may be caused by unfortunate financial or social conditions. More often, however, the cause is simply lack of sympathetic understanding from parents or teachers.

Constant unsympathetic treatment must almost certainly develop a deep feeling of inferiority or of resentment. And the loneliness and disheartenment of a bewildered childhood may be a prelude to a viciously embittered adulthood!

Cardiac Clinic Number VII

Cardiac Circulation in Hypertension

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The relation of the circulation of the heart to its effective action is a point of vital interest in the case of the hypertrophied heart.

Various ideas have been proposed to account for the increased size of the heart so often found clinically and at autopsy. The increase in weight is produced largely by an increase in the size of muscle fibers. There is no indication that the number of muscle fibers is increased. Yet, the weight of the heart may be increased up to 100 per cent. Some of this may be accounted for by increase of connective tissue, but indications are that this increase is generally comparatively slight.

The reason for the increased size is generally increased work. The increased work is sometimes due to a valvular lesion, but the majority of hypertrophied hearts increase in size because of hypertension, and it is in this group that we are most interested.

The tension within the arterial system calls for a greater energy output by the heart muscle. This is accomplished first by lengthening the muscle fibers resulting in dilatation. Elongation gives more reactive surface within the muscle fibers and also increases the outside surface through which oxygen and nutritive materials reach the muscle tissue. If the period of increased load is not too long, nor the load too great, recovery takes place. For reasons unknown at present, if the lengthening of the fibers (dilatation) persists, hypertrophy follows. The effective mass of muscle tissue is thus increased enabling it to better carry the load.

Normal and hypertrophied fibers are illustrated in Figures 1 and 2. The normal heart, from a woman of 26 weighed 240 grams. The hypertrophied heart, from a hypertensive man of 48 weighed 700 grams. There was only a little fibrosis. Some interstitial edema was present.

The increased size of the muscle fiber introduces a new set of problems. Nutrition and oxygen exchange can take place only through the surface of the fiber. As the size of the fiber increases the surface of a given length of fiber is increased porportionally to the radius, while the mass is increased as the square of the radius. This means that the advantage in strength gained by increase in size is offset to some extent by the fact that the nutritive area is not increased proportionately.

A second factor has to do with the distance through which the oxygen must diffuse into the fiber from the capillary. The rate of diffusion according to Hill⁽¹⁾ varies as the square of the distance through which it must diffuse. This introduces the element of time. The period for oxygen replenishment is dependent on the rate of the heart. Since the pressure within the mass of muscle tissue must at least equal the pressure exerted on the contents of the ventricle, blood cannot flow through the vessels in the muscle during systole. All oxygen exchange and nutrition

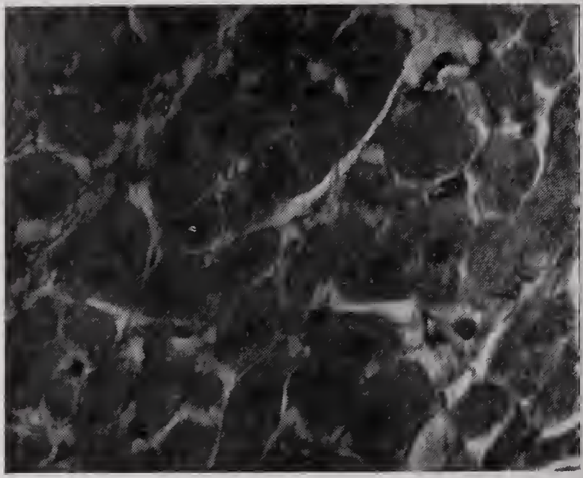

Fig. I. Normal heart muscle from woman age 26, heart weight 240 grams. X430.

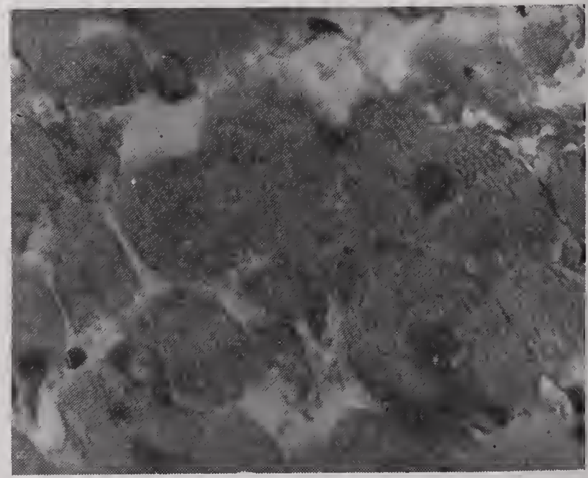

Fig. II. Muscle from hypertrophied heart, man age 48, heart weight 700 grams. X430.

must then take place during diastole. Duration of diastole is determined by the heart rate, but is not proportional, for as the heart rate is increased, systole is shortened proportionately more than diastole. But diastole is shortened and since the time necessary for complete oxygenation of a fiber is fixed by its thickness, a rate can be reached beyond which fibers are not completely oxygenated. Conversely, a fiber size can be reached, beyond which the fiber cannot be thoroughly oxygenated at ordinary rates. Harrison(2) has determined that the limit is about 25 micra (average normal, 15 micra). In fibers of greater size the metabolic disadvantage outweighs the mechanical advantage.

The considerations taken up so far have assumed an oxygen concentration of the average normal range within the capillaries. Theoretically this tension might be increased by increasing the rate of flow through the coronary circulation. But we know that in a large number of cases changes are present in the coronary circulation. These consist of atheromatous change in the walls of the coronary arteries which may have gone on to calcification. Milder degrees of atheromatous change may not seriously interfere with the lumen of the vessel, but it is possible that they represent changes preventing dilatation of the vessels which would be necessary to augment the blood flow through the heart. Preventing increases in size of the vessels will result in a proportionate decrease in the circulation to an enlarged mass of cardiac muscle.

But we see in very many of these hearts calcification and proliferation of the walls so that the lumen of the vessel is actually decreased. This may place a heavy handicap on the heart which requires more than the normal amount of blood.

SUMMARY

1. The heart undergoes hypertrophy to meet an increased load.

2. The increased load is frequently hypertension.

3. The hypertrophy increases the mass and diameter of individual fibers.

4. Increase in size and diameter of the fiber introduces a metabolic disadvantage.

5. The frequently concomitant coronary sclerosis may prevent a necessary increase or even maintenance of cardiac circulation.

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LAUGHTER FRESHENS YOUR BLOOD

Mirth is to the human body as sunshine is to vegetation, Dr. S. A. Shoemaker exclaims in his article entitled "Laughter" in the April issue of *Hygeia*.

If we would have life abundant and flowing over, we need a copious supply of oxygen, the author declares, and this can be secured most easily through laughter. At the same time, this deeper oxygenization of the blood is secured without the irksomeness of conscious effort that accompanies exercise taken up for its own sake.

Thus through laughter one can vitalize one's blood while reclining on an overstuffed couch when not able to engage in active sports in the gymnasium.

Laughter is a source of therapy for the neurotic, irregular heart. Patients with this affliction are afraid to laugh lest their heart will stop altogether; whereas experiments have proved that a hearty laugh repeated at proper intervals has relieved this trouble. The heart is deeply under the influence of the emotions, and the free outburst of laughter combined with its mechanical action produces a salutary effect on that organ.

Laughter is a good exercise for the digestive organs. They are definitely moved to increased activity by the shaking and massage they get from the abdominal muscles during laughter.

The ideas and situations that make us laugh are classified as wit and humor. Wit may be kindly, or neutral, or it may carry a sting or sarcasm. It is the shock of pleasant surprise from meeting unexpected difference between things that are alike; or it occurs as the result of utterly incongrous things combined in the expression of one idea.

In contradistinction to wit, humor deals with incidents, characters and situations. True humor is always kindly and gracious; while it points out and pictures the weaknesses of humanity it feels no contempt and leaves no sting. It has its root in sympathy and blossoms out in toleration.

Laughter is a healer not only of the body but of the mind. It is the language of peace, sympathy and good will. It is the fragrance of life that yields health and friends, and increases your bank account. Laughter was always an art. Recently it has became a science.

According to Dr. J. D. Craig of The New York Foundling Hospital, ripe mashed banana is easily digested by infants six weeks of age or older, regardless of complicating illnesses or degree of malnutrition.

The Nebraska State Medical Journal

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Vol. 23 September, 1938 No. 9

EDITORIAL

THE SPEAKERS' BUREAU WISHES TO HELP

The Speakers' Bureau of the Nebraska State Medical Association is adapted to aid County Medical Societies in arranging their scientific programs for the ensuing year. On the list of speakers who volunteered to fill engagements are some of the outstanding members of the profession in this State, equipped by experience and training to deal with their subjects in a manner that tends to make the program practical as well as instructive. It is hoped that secretaries and program committees will take advantage of this Bureau and call on its able chairman for advice and suggestions. This recommendation should in no way be interpreted as a reflection upon the meetings of former years. Where good-fellowship and exchange of ideas are afforded no meeting can be a failure. That there is always room for improvement is equally true.

Those of us who have enjoyed the process of planning for medical meetings will concur with the statement that programs arranged at the commencement of the season, covering tentative dates over the entire year always prove smoother and more effective than are those hastily improvised a short time previous to the day of the meeting. In seasons past such a planned undertaking was next to impossible what with the desired speakers being scattered not only geographically but as well in subject matter. The geographic disadvantage has been greatly overcome by improved travel facilities. The subject matter has been organized to such an extent that any local or district society is presently enabled to lay out its plans for the entire season. The variety of topics is great and almost any subject or series of subjects desired by individual groups may be supplied, provided sufficient time be allowed for proper selection of both dates and personnel.

While the Speakers' Bureau stands ready to aid in planning and arranging these programs it is not its intent to minimize the importance of local participation. It would be a pity indeed if such functions as the Bureau has been assigned, should in the smallest way detract from the facilities presently afforded individual members of their own societies to bring whatever local problems of a clinical, or social nature, for free discussion among their fellow physicians.

ARE THE CHILDREN IN YOUR COMMUNITY READY FOR SCHOOL?

Many thousands of children this month will be wending their way back to school. Many there will be who for the first time in their young lives will be entering upon their unknown duties and responsibilities connected with the educational system. All will be subject to rules, regulations and moves essential to group activity and mass production. They will be expected to play the game and play it fairly.

Educators have long appreciated the significance of health in its various phases and the role that it plays in the physical, mental, emotional, and social adjustments which the youngster is called upon to make in school. It is also to be remembered that a good deal of the criticism against the alleged faulty distribution of medical care comes from groups interested in the welfare of the school child. It is no idle gossip that countless thousands of youngsters attending classes are victims of correctible defects which have been neglected to the point where happiness and efficiency are unattainable. Many are malnourished, some are suffering from faulty vision, many are hard of hearing, not to mention those without number who have decaying and decayed teeth that interfere with their optimum growth and development.

To say that the health of the individual child is purely a responsibility of the physician, is ridiculous. It is equally absurd to place the responsibility for it upon the Federal or State government, although some short-sighted theorists are making a desperate effort to relegate the problem to political broad shoulders. We may be accused of "stand-patism" but we still maintain that it is the parents' duty to supply the means to health for their offspring. There is hardly a community where such medical facilities as the child needs are wanting. There is scarcely a physician in this State who is unable or unwilling to do his best in an effort to supply the necessary care and advice for parents to follow to the end that the children in his community may grow and develop into healthy, self-respecting citizens.

Yet we are not entirely blameless in this neglect of our school children. Our personal and professional modesty is no longer justified in the presence of constructive rehabilitation of which we are today capable. We must retain our faith in the parents of these unfortunate children and lend a guiding hand extended with reason and convictions in order that they may appreciate the handicaps under which these youngsters are struggling in a competing world.

It is our duty to urge parents directly to have their youngsters examined prior to their return to classes. It is also our duty to exercize all our tact and knowledge in an effort to have remediable defects corrected in order that these children may enter and continue upon their year's work in school unhindered by physical disabilities.

ANNOUNCEMENTS

THE AMERICAN MEDICAL ASSOCIATION SURVEY

The A. M. A. survey for medical needs has been started in Nebraska. Physicians are urged to fill out the questionnaire to the best of their ability. It is the purpose of this survey to establish the truth regarding medical and dental needs that may refute the exaggerations issued by a number of medical investigations started on the basis of socialistic prejudices.

Please cooperate in this worthy effort. Fill out the blank and return it to its proper source

* * * * * *

THE OMAHA MIDWEST CLINICAL SOCIETY

The next annual assembly is October 24-28. A complete program of the sessions will appear in the next issue of this Journal. In the meantime make your plans to attend these instructive sessions.

* * * * * *

COMMITTEE ON CARDIAC DISEASE

A new Scientific Committee on Cardiac Disease has been appointed by your President according to the new By-Laws adopted at the last session of the House of Delegates.

The Chairman of this Committee automatically becomes a member of the Advisory Board to the Committee on Medical and Public Health Education.

The personnel of this Committee:

Frederick W. Niehaus, Chairman	Omaha
Floyd L. Rogers	Lincoln
Lucien Stark	Norfolk
Wayne Waddell	Beatrice
George Pinney	Hastings

HOMER DAVIS, President,
Nebraska State Medical Association.

* * * * * *

AMERICAN BOARD OF INTERNAL MEDICINE, INC.

Written examinations for certification by the American Board of Internal Medicine will be held in various parts of the United States on Monday, October 17, 1938, and on Monday, February 20, 1939.

Formal applications must be received by the Secretary before September 15, 1938 for the October 1938 examination, and on or before January 1 for the February 1939 examination.

Application forms may be obtained from William S. Middleton, M. D., Secretary-Treasurer, 1301 University Avenue, Madison, Wisconsin U. S. A.

* * * * * *

RAILWAY SURGEONS TO MEET IN CHICAGO

The 23rd annual meeting of the American Association of Railway Surgeons will be held at the Palmer House, Chicago, September 19th to 23rd, 1938.

This association includes members in practically every railroad company in the United States, as well as the separate group organizations, embracing railroad surgeons of the New York Central System; Southern Railway; Atlantic and West Point R. R.; Western Ry. of Alabama; Illinois Central System; Chicago, Milwaukee, St. Paul and Pacific R. R.; Rock Island Lines; Chicago, Burlington and Quincy R. R.; Chicago and Northwestern R. R.; the Georgia Railway and other road associations.

An extremely interesting and highly profitable program has been arranged and all physicians and surgeons are invited to attend the sessions of this meeting as guests of the organization.

NEWS AND VIEWS

We quote from the Associated Press to the Omaha World Herald, August 3. Under boldface headline "Republicans Study Issue of Medicine."

> . . . The controversial medical issue was among a wide range of national problems being studied by the committee this week in preparing a prospectus to be submitted to the republican national committee next year.
>
> Dr. H. L. Snyder of Winfield, Kans., was scheduled to represent the American Medical association at the closed forum. Dr. John P. Peters, professor of medicine, Yale university, and secretary of a committee of physicians opposing the medical association's policies, was slated to take part.
>
> The committee's attempt to find a common denominator for the nation's medical problem comes only a few days after the justice department at Washington accused "organized medicine" of illegal activities against a co-operative health group and announced a grand jury investigation to ascertain "the particular persons responsible." The medical association virtually challenged the administration to a court struggle.
>
> Last month association officials heaped criticism on a presidential committee's recommendation for a 850 million-dollar government health program, terming it "unworkable."

Seventy-five doctors from various parts of Nebraska assembled in Hotel Norfolk Tuesday evening, July 20, and paid tribute to Dr. Lincoln Riley, Wisner physician, in recognition of a half century of practice.

Speakers following the dinner were George A. Eberly, Lincoln, associate justice of the Nebraska supreme court; Dr. Morris Nielsen, Blair, and Dr. John P. Lord, Omaha. Dr. Lucien Stark was toastmaster.

Following the speakers, Dr. U. S. Harrison, Neligh, president of the Madison Six-County Medical society, presented Dr. Riley a gift on behalf of the medical society.

The 1938 Better Babies Conference was held in Hastings, July 26, 104 youngsters being examined by physicians and dentists. Members of the Infant Welfare Club assisted in caring for the babies.

Physicians giving examinations were Mary Bratt, J. W. Brown, L. J. DeBacker, Donovan Foote, J. B. McPherson, J. L. Mace, D. P. McCleery, George L. Pinney and Walter Nowers of Kenesaw.

Dr. J. Frederick Langdon of Omaha was recently appointed district surgeon to the Union Pacific Railroad succeeding the late Dr. C. R. Kennedy.

AUXILIARY NOTES

Members of the Medical Auxiliary of Nebraska

One of the reasons for organization of the Auxiliary was to serve as a social value to the medical profession. We have found that there are many reasons for it to continue. Wives have become acquainted; we hope that if there were jealousies they have been erased; and if the attendance at the medical meetings has not as yet increased we will hope that we have some influence in that respect this year.

If we are to act as a force of any kind we must be intelligent about the medical and health laws of our community and state. So our first concern is a process of self education. We must inform ourselves about the state Board of Health, the local Board, and of what any health organization is doing. Auxiliary membership is important on such local boards. Through this affiliation the correct information will be given regarding medical problems. A correction after a discussion usually causes confusion of thinking Our job is to give the right information first! We have an excellent Public Relations Chairman, Mrs. E. S. Wegner, Lincoln, who will supply us with facts and the method of approach to groups.

We must assume that all of our Auxiliary members will study the different phases of our work in order to become intelligent members of another organization, thus encouraging the public to form the habit of looking to the medical profession for advice and information on matters of health.

We have a challenge this year as in other years. Perhaps we may meet it easier now because of our hard work in the past. The PUBLIC is determined to listen to someone. The Doctor's wife is a lay person, but a lay person with an unexcelled opportunity to obtain correct information to give to a waiting public. I should put Public Relations first on the MUST list this year. Always remember that we cannot give to others what we do not know ourselves. We will never bore people with information if it is correct and timely. Don't wait until there is an epidemic before you prepare your mind with facts regarding immunization and proper health habits.

Many persons like the printed word, so we are fortunate to be able to give them the information that Hygeia is a magazine for every home. Mrs. Herbert Davis will be writing to you for subscriptions.

Mrs. J. E. Gelow, Grand Island, will supply you with information about our health laws and give you a simple outline to follow. The programs of past years are available, outlining studies of milk, blindness, T. B., and other things which are always with us. No program on health can ever be laid aside as finished. Each community demands a new approach to a problem and each year a new problem arises.

Our Legislative Chairman, Mrs. Lucien Stark, Norfolk, will make this study interesting as she interprets the bills for us. The state items will take her time so the County Presidents should keep their groups informed as to the Pure Food and Drug bill in Congress. The A. M. A. Journal will be a source of information.

We should be familiar with the Children's Charter. Get a copy from the U. S. office of Education. Our future lies with the youth and we are responsible for giving them the right care and training, so that they will be better fitted for parenthood. Their problems will be more easily met if we solve some of ours now.

The Bulletin from the Executive Secretary's office which is sent to all eligible physicians, will prove very helpful. You must be aware of the thinking of our medical group. Talk these things over with your Advisory Committee. Do nothing about them unless advised by your Committee, BUT you must keep INFORMED.

There is no greater influence than one large group thinking clearly and then transmitting the result to all groups contacted. We should have no concerted action which would tend to discredit the intention. If our information is correct and proved by statistics or credited surveys, we can have unlimited influence. A word dropped at the right time in the right quarter is all that is necessary—providing it is the RIGHT WORD.

Will each County President find out for our Secretary or our Public Relations Chairman the number and kind of organizations her members contact and report the opportunties for, and the result of information. Sometimes one conversation will be enough to change the thought of a community. LET me REPEAT that the opportunity should NOT BE planned unless it seems wise and then ONLY at the suggesttion of the Advisory Committee.

OUR COMMITTEES are important! When you receive a letter from one of the Chairmen please realize that it requires an answer. We are all busy with many things. LET'S MAKE the AUXILIARY job a NECESSARY one.

Organization will be a major concern this year. Whenever you get a call or a letter from Mrs. Charles Abbott will you please give it your close attention and do as much to help her as possible. We must not lose sight of our plan to organize every county in Nebraska.

Exhibits are of great importance in the making of our state medical history. Mrs. J. Jay Keegan expects each Auxiliary to furnish her with examples of activities. We must give the same aid to Mrs. Floyd Rogers, our Historian.

Our best means for letting all persons know that we are a thriving group in a community is through our Press notices. A Publicity Chairman cannot make up items, so you must see that Mrs. Fred Ferciot, 2738 Sewell, Lincoln, is furnished with items regarding any sort of activity of your Auxiliary.

Each County President should read the National News Items in the Medical Journal and if possible ask for a subscription to the News Letter. Do not hesitate to write to any one of your officers for aid in your work.

Each County President should appoint a May Day Chairman to work with the P. T. A. and the Health Chairman.

We must make a great effort to get the radio to carry the A. M. A. Health programs this year.

Collect your dues at your first meeting so we will know about our budget.

I am sure that I seem to repeat a great deal but I believe it is necessary since we meet so seldom and do not have time to talk of our strength as an organized information bureau.

I know that each one will make this her Auxiliary because that is the way to succeed in making it of use to the Medical Society.

Read report of survey of Public Health in August issue of the Nebraska State Medical Journal.

MRS. C. W. POLLARD,
President

Sept. 1, 1938

ANNOUNCEMENT

Dr. C. M. Hyland of Los Angeles, California, will speak before a group of women on October 26th. His subject will be "The Use of Convalescent Human Blood Serum in the Treatment of Disease."

Dr. Hyland is a pioneer in this type of therapy and is exceptionally well qualified to talk on this subject. His work is conducted in connection with the Children's Hospital in Los Angeles. His equipment for processing human blood into convalescent serum is outstanding.

The talk is sponsored by the Nebraska State Medical Association with the help of the Woman's Auxiliary of the Omaha Douglas County Medical Society. It is hoped to interest numerous organizations in Omaha and throughout the State.

PRESS COMMENTS ON MEDICAL PROBLEMS

In this section will be recorded lay editorial comment on various phases of medicine. Physicians are urged to forward to The Journal clippings of interest to the profession. —(Editor).

Omaha World Herald

August 3, 1938

THE MEDICAL PROBLEM

These are troubled days for the American Medical association. Recently embroiled in internal strife at the national public health conference, plagued with constant opposition from a committee of 430 "rebel" physicians, the association now faces a trust busting probe at the hands of the United States department of justice.

Few national problems come as close home to all of us as the problem of medical care, its cost and quality. That fact makes the government probe a matter of public importance.

A local unit of the medical association is accused of "illegal activities" against the Group Health Association, Inc., a co-operative organized last fall by 2,500 government workers in Washington to provide prepaid medical care "at a cost which the members could afford to pay." Other local units have been combating similar organizations elsewhere as the opening wedge to socialized medicine.

The United States Technical Committee on Medical Care issued a government report early this spring indicating that more than 200 thousand deaths a year could be prevented if medical science were adequately, fully applied. The "rebel" committee of 430 and another group of doctors within the association have voiced opposition to the association's attitude on social medicine and have asserted that the medical profession has failed to supply adequate medical care at reasonable cost.

This controversy indicates that the medical problem will bear some careful, unprejudiced study. Possibly the justice department's investigation will help solve the problem, whether or not the solution is to be found in co-operative organizations such as the Group Health association.

Whatever results from the government investigation the general public is bound to be genuinely concerned. It is an important problem for all of us.

Nor is it at all a one-sided problem. On the one hand, in all too many instances, is the admitted prohibitive cost of medical care and hospitalization that works its tragic hardship. On the other is the devotion, so often not only unselfish but self-sacrificing, of a noble profession, whose members for the most part give themselves without stint, in time, in skill, in charity, in sympathy, in sleeplessness, to the cause of humanity. In the free practice of their art and science they have recorded progress immeasurably greater than have statesmen and politicians in their own ill-cultivated field. And there are few of them who get, in return for all that they give, more than a modest livelihood.

It is no simple task to find a solution that will afford adequate medical and hospital care, now grievously lacking, to all in need of it, keep the profession on a high and progressive standard, and safeguard to all the cherished right to choose their own doctor as they do their own lawyer, their own architect, their own church. Whether politics, bungling its own job so sadly, can help, remains an open question. But anyhow we may hope.

* * * * * *

The Tribune

Fremont, July 24, 1938

SCRAP IN MEDICAL RANKS

There appears to be an upheaval in the ranks of the American Medical association. There are those who seem to think the cost of medical care is too high and are "rebels" against the high fees that have grown up in the past few years.

One place where the medical fraternity has upped its fees is in obstetric cases. So far as we are informed these fees have far outrun the advance in wages and salaries of the young people upon whom rests the duty of perpetuating the population.

The charges are high enough to discourage young married people from raising families. With the social and other demands of the day so much in excess of wage remuneration it is a discouraging job to raise children.

If there is any class of medical service that ought to be at the lowest consistent point it is just such services as we are considering. A prosperous country is one where the birth population increases on a reasonable basis. It should not be handicapped by heavy fees in obstetric cases that are beyond the ability of young parents to meet.

* * * * * *

Norfolk News

August 3, 1938

CONTROLLING OPINIONS

The administration's fight on the American Medical association looks suspiciously like an attempt by Washington to dictate the opinions and policies of organized professional groups.

The administration is for socialized medicine. The doctors who make up the American Medical association are against socialized medicine. The association has laid down ethical standards its members must adhere to if they remain members, and it is alleged that among these is a bar raised against any physician who becomes the practitioner for a socialized or cooperative health group.

Over the virtues and vices of socialized medicine we needn't argue. The issue is whether organized groups of professional men and women can have policies that the administration, doesn't agree with and can set up standards they expect their members to maintain. If the government can take the American Medical association before a grand jury because of its rules in regard to medical cooperatives, why can't the American Bar association be brought before the same tribunal because it doesn't agree with the administration on the supreme court issue? The analogy may not be exact, but let the precedent be established in the one case and the next step may easily be to give it wider application.

The differences between the doctors' organization and the administration supporters of socialized medicine should be fought out in public discussion and debate, not by the haling of the negative debaters before a grand jury. That smacks of government oppression.

Register, Des Moines, Ia.

MR. ARNOLD AND THE DOCTORS

When Thurman Arnold, assistant attorney general, "cracked down" on the American Medical association, accusing it of coercion of physicians in Washington by prohibiting them from co-operating with a group health association, the medical association officers were dumbfounded.

But their astonishment didn't last long. Out of the association's headquarters in Chicago has come a reply to the effect that Mr. Arnold couldn't ". . . mold the people of the U. S. to (his) belief in every phase of life and living," etc., etc. This, unfortunately, is of the poorer brands of red herring.

In fairness, however, it must be said that Mr. Arnold's actions were a bit high-handed. His denunciation of the medical association was probably undiplomatic.

But by threatening a physician with expulsion, the medical assocation has a tremendous weapon. Being expelled from the association means that a physician can no longer have access to most hospitals or clinics. It means that many other qualified physicians would have nothing to do with him. It often means that he is labelled a quack or a charlatan. Yet these are the penalties with which the association officers are accused of having threatened every physician in the District of Columbia who might dare to co-operate with a group health association plan there.

It may be true that the American Medical association is a private group, and that it can lay down whatever rules it pleases for its members. But it is also true—and the association is very proud of this fact—that medical services are of basic importance to the public at large.

Under the circumstances, any group which attempts to dictate the lines of medical practice, and the methods of charging and collecting fees, is necessarily dealing with matters affecting the public interest.

It is only natural that public representatives should insist on having something to say about such things.

(STATE) DEPARTMENT OF HEALTH
Lincoln, Nebraska

NEBRASKA'S 1937 MORTALITY ANALYZED FROM THE VENEREAL DISEASE STANDPOINT

Edmund G. Zimmerer, M. D., Assist Epidemiologist
Division of Venereal Diseases
(State) Department of Health, Lincoln, Nebraska

In 1937 there occurred in Nebraska 13,200 deaths from all causes. This figure does not include 520 stillbirths. The total mortality for the year was 13,720. The principal causes of death in the order of frequency were as follows:

		Deaths	Per 100,000
1.	Heart disease	2,534	185.8
2.	Cancer	1,557	114.1
3.	Apoplexy	1,210	88.7
4.	Accidental	957	70.2
5.	Nephritis	867	63.6
6.	Pneumonia	847	62.1
7.	Diabetes	357	26.2
8.	Auto accidents	300	22.0
9.	Suicides	279	20.5
10.	Tuberculosis	261	19.1
11.	Syphilis	52	3.8
12.	Poliomeylitis	44	3.2
13.	Diphtheria	16	1.2
14.	Typhoid	14	1.0
15.	Measles	4	0.3

The same factors which prevent accurate reporting of venereal disease, of smallpox or infantile paralysis, added to a sympathetic regard for the feelings of surviving relatives, operate to influence physicians to cover up the true cause of death in syphilis. Hence, the mortality report is not altogether a true picture of the situation.

During the past five years frank unmodified reports show the following mortality from syphilis:

1933—63 or 4.5 per 100,000
1934—52 3.7
1935—45 3.3
1936—57 4.2
1937—52 3.8

Even with the acceptance of these figures as accurate, syphilis rates next to pneumonia and tuberculosis as a killer among the infections. If, however, we assume, as we conservatively may, that 15 percent of all heart deaths and 5 percent of apoplectic deaths were syphilitic, even though we ignore the possibility of leutic infection in suicides, accidental deaths, and other conditions, we find lues to be the cause of death in at least 440 cases or 31 per 1,000. Thus, syphilis will rank seventh in all causes of death and second only to pneumonia among the communicable diseases.

In addition there occurred 88 maternal deaths, 933 infant deaths, and 520 stillbirths. Recognizing the probability of a syphilitic factor in the last two conditions and accepting the minimum estimate of 6.5 per cent of stillbirths as leutic, we may conclude that at least 260 more deaths may be credited to syphilis and that a minimum of more than 700 deaths annually, or about 1/5 of all deaths in Nebraska, are due to syphilis.

MORBIDITY SUMMARY—PRINCIPAL DISEASES

	1938			1937		
	July	June	Total to Date	July	June	Total to Date
Chicken-pox	17	117	1216	15	64	833
Diphtheria	2	15	99	5	0	48
Influenza	0	0	129	0	0	451
Measles	71	611	2504	33	62	529
Meningitis, C. S.	2	2	35	3	0	29
Poliomyelitis	1	0	3	20	3	28
Scarlet fever	14	65	981	40	103	1836
Smallpox	6	6	172	3	13	158
Tuberculosis	19	28	126	27	13	116
Typhoid fever	1	0	8	4	2	12
Whooping cough	53	55	336	55	65	385
Gonorrhea	49	84	551	118	128	555
Syphilis	48	73	481	75	130	539

REPORT OF STATE-WIDE SURVEY OF PUBLIC HEALTH ACTIVITIES IN NEBRASKA

Continued from August Issue

Name of County	Valuation	Population 1930	Wealth Per Capita	Taxation Rate			Total Collections	Public Health Expenditures	Per Cent of Tax Money Expended for Public Health	Medical Aid to Indigent	Per Capita Cost	Per Cent of Tax Money for Medical Aid	Amounts Expended Red Cross	Other Agencies	Per Cap. Cost of Public Health
				State	County	Total									
Adams	32,045,179	26,275	1219.53	2.64	4.34	6.98	809,285	3500	.43	15892.00	.604	1.96	1260	1500	.133
Antelope	21,615,140	15,206	1421.49	2.64	4.50	7.14	347,413	45	.013	7222.00	.475	2.08	----	120	.003
Arthur	2,127,655	1,344	1590.00	2.64	4.95	7.59	47,746	42.25	.088	19.40	.012	.04	----	----	.032
Banner	2,978,870	1,676	1777.36	2.64	4.36	7.00	89,173	----	--	700.00	.42	.77	----	----	---
Blaine	2,686,500	1,584	1715.00	2.64	4.96	7.60	27,833	----	--	794.00	.50	2.85	----	----	---
Boone	26,988,645	14,738	1831.23	2.64	4.00	6.64	202,243	500 vac.	.24	1870.00	.126	.925	----	----	.034
Box Butte	11,842,714	11,816	1002.38	2.64	4.50	7.14	293,482	1000 nurse	.34	2618.00	.221	.86	250	----	.085
Boyd	8,002,720	7,169	1116.30	2.64	5.44	8.08	194,185	----	--	2105.00	.29	1.084	----	60	---
Brown	6,632,442	5,772	1149.00	2.64	5.00	7.64	171,795	660 sc. ex.	.38	5114.00	.886	.3	----	----	.114
Buffalo	34,345,669	24,338	1411.17	2.64	4.20	6.84	1,101,171	2750	.25	7136.00	.293	.648	----	700	.113
Burt	23,842,060	13,068	1824.46	2.64	3.91	6.55	346,618	----	--	8398.00	.642	2.42	----	100	---
Butler	32,175,180	14,410	2232.00	2.64	2.56	5.20	558,323	40	.007	802.00	.056	.14	----	30	.0028
Cass	33,883,999	17,684	1916.08	2.64	4.36	7.00	505,180	275	.054	4799.00	.271	.95	----	200	.015
Cedar	31,224,513	16,427	1900.80	2.64	4.36	7.00	321,309	----	--	2800.00	.17	.87	----	50	---
Chase	7,474,667	5,484	1363.00	2.64	5.00	7.64	252,805	80	.032	1876.00	.32	.74	----	----	.014
Cherry	19,527,965	10,898	1791.89	2.64	4.36	7.00	498,149	----	--	9393.00	.86	1.88	250	100	---
Cheyenne	20,318,985	10,189	1994.20	2.64	4.50	7.14	888,738	60	.007	4447.00	.44	.5	150	----	.006
Clay	24,904,930	13,571	1835.44	2.64	2.96	5.60	542,750	100	.019	5496.66	.40	1.01	----	80	.007
Colfax	25,281,483	11,434	2211.08	2.64	3.86	6.50	336,591	800	.237	2060.00	.18	.61	50	25	.07
Cuming	32,737,019	14,324	2286.86	2.64	1.96	4.60	432,171	----	--	4754.00	.33	1.1	----	----	---
Custer	30,981,480	26,184	1183.22	2.64	4.22	6.86	1,006,215	60	.006	15725.00	.60	1.55	----	75	.002
Dakota	13,104,931	9,505	1378.74	2.64	4.80	7.44	651,482	----	--	8472.00	.87	1.30	----	80	---
Dawes	12,488,879	11,493	1086.65	2.64	5.26	7.92	313,291	----	--	7366.00	.64	2.35	----	150	---
Dawson	30,444,120	17,875	1703.22	2.64	4.76	7.40	578,856	60	.01	16000.00	.89	2.76	----	75	.0034
Deuel	8,875,065	3,992	2223.21	2.64	3.66	6.30	214,911	200	.098	1496.00	.37	.69	----	----	.05
Dixon	18,710,938	11,582	1615.52	2.64	4.70	7.34	375,664	----	--	7270.00	.63	1.93	50	----	---
Dodge	39,947,755	25,273	1580.57	2.64	3.36	6.00	689,794	2525	.366	10540.00	.42	1.53	200	90	.10
Douglas															
Dundy	8,115,538	5,610	1624.87	2.64	5.00	7.64	161,686	120	.07	1905.00	.34	1.23	----	----	.021
Fillmore	27,193,704	12,971	2096.35	2.64	4.00	6.64	334,659	125	.037	5038.00	.39	1.51	75	30	.01
Franklin	12,472,172	9,094	1371.47	2.64	4.96	7.60	317,520	50	.0157	4965.00	.55	1.56	----	100	.005
Frontier	10,695,700	8,144	1318.18	2.64	5.00	7.64	302,844	----	--	2328.00	.287	.77	----	75	---
Furnas	14,746,250	12,140	1231.24	2.64	4.60	7.24	450,615	75	.0166	4897.00	.40	1.1	----	40	---
Gage	47,552,435	30,242	1572.36	2.64	3.80	6.44	961,320	2000	.21	1970.00	.065	.204	----	425	.066
Garden	9,041,861	5,099	1773.26	2.64	4.86	7.40	248,360	50	.02	1755.00	.34	.7	----	55	.0099
Garfield	3,745,170	3,207	1167.79	2.64	5.00	7.64	66,837	----	--	248.00	.077	.34	----	----	---
Gosper	7,600,000	4,287	1772.80	2.64	5.00	7.64	105,173	----	--	654.00	.15	.62	----	----	---
Grant	4,629,587	1,427	3237.00	2.64	5.00	7.64	98,022	----	--	115.60	.08	.11	----	----	---
Greeley	12,090,330	8,442	1420.43	2.64	5.36	8.00	178,891	----	--	3787.32	.44	2.1	30	90	---
Hall	33,403,000	27,117	1231.44	2.64	3.77	6.31	1,217,192	3800	.31	4788.00	.18	.393	200	----	.14
Hamilton	24,245,170	12,159	1993.92	2.64	3.94	6.58	486,707	600	.123	4090.00	.34	.84	----	30	.05
Harlan	11,860,000	8,957	1324.10	2.64	4.86	7.50	349,837	----	--	4288.00	.479	1.22	----	----	---
Hayes	4,875,065	3,603	1353.00	2.64	5.00	7.64	149,980	65	.042	3092.00	.83	2.06	----	----	.018
Hitchcock	10,278,000	7,629	1347.49	2.64	5.00	7.64	309,116	----	--	3541.00	.46	1.15	500	----	---
Holt	18,277,535	16,509	1107.07	2.64	4.76	7.40	393,722	----	--	3829.00	.23	.98	----	----	---
Hooker	2,892,340	1,180	2451.14	2.64	5.00	7.64	79,459	12	.015	828.00	.70	1.03	----	----	.01
Howard	16,110,000	10,020	1607.78	1.76*	2.94	4.70	238,470	50	.02	2339.00	.23	.98	50	----	.005

Name of County	Valuation	Population 1930	Wealth Per Capita	Taxation Rate			Total Collections	Public Health Expenditures	Per Cent of Tax Money Expended for Public Health	Medical Aid to Indigent		Per Cent of Tax Money for Medical Aid	Amounts Expended Red Cross	Other Agencies	Per Cap. Cost of Public Health
				State	County	Total					Per Capita Cost				
Jefferson	27,666,888	16,409	1686.00	2.64	4.38	7.02	443,294	960	.216	14340.00	.87	3.234	----	----	.059
Johnson	16,963,933	9,157	1852.62	2.64	4.50	7.14	244,057	50	.02	1977.44	.216	.81	80	----	.005
Kearney	15,342,470	8,094	1895.53	2.64	2.56	5.20	217,361	40	.02	4621.00	.57	2.13	----	40	.005
Kieth	12,967,819	6,721	1929.45	2.64	5.00	7.64	353,900	142	.04	9476.00	1.41	2.68	73.65	----	.021
Keyapaha	3,780,730	3,203	1180.37	2.64	6.00	8.64	89,540	20 exam	.022	1286.00	.40	1.44	----	----	.006
Kimball	11,477,025	4,675	2455.00	2.64	4.96	7.50	292,429	115	.04	1027.00	.22	.38	30	----	.024
Knox	22,688,608	19,110	1182.26	2.64	5.00	7.64	418,950	----	--	10000.00	.50	2.38	----	140	---
Lancaster															
Lincoln	27,639,615	25,627	1078.53	2.64	4.20	6.84	1,200,946	1600	.133	17067.00	.66	1.42	----	475	.06
Logan	3,726,998	2,012	1852.37	2.64	5.00	7.64	106,540	----	--	825.82	.41	.8	----	----	---
Loup	2,249,865	1,818	1243.05	2.64	4.96	7.60	46,769	----	--	450.00	.25	.96	----	----	---
McPherson	2,085,080	1,358	1535.40	2.64	5.00	7.64	63,273	----	--	692.00	.51	1.1	----	----	---
Madison	35,000,000	26,037	1344.20	2.64	4.50	7.14	1,069,147	300	.028	18892.00	.72	1.77	----	85	.011
Merrick	20,602,893	10,619	1940.19	2.64	3.16	5.80	325,272	150	.046	1687.00	.16	.52	----	50	.014
Morrill	12,197,120	9,950	1225.84	2.64	5.50	8.14	526,459	----		4000.00	.40	.77	----	----	
Nance	15,259,475	8,718	1750.22	2.64	3.50	6.14	246,905	----	--	6913.00	.79	2.8	----	170	---
Nemaha	21,109,135	12,356	1708.23	2.64	4.50	7.14	749,376	100	.013	2192.00	.18	.28	----	142	.008
Nuckolls	21,456,455	12,629	1699.00	2.64	4.76	7.40	324,173	----	--	3900.00	.31	1.20	100	----	---
Otoe	37,118,587	19,901	1865.00	2.64	4.40	7.04	580,359	2184	.379	8702.00	.437	1.49	100	2650	.11
Pawnee	17,383,575	9,423	1848.80	2.64	5.00	7.64	256,444	----	--	1589.00	.17	.6	1260nurse	50	---
Perkins	8,575,239	5,834	1470.00	2.64	4.70	7.34	308,237	10	.003	1460.00	.25	.47	----	----	.02
Phelps	16,399,120	9,261	1770.77	1.76*	3.24	5.00	302,720	1500 nurse	.495	2220.00	.24	.73	----	150	.16
Pierce	21,866,453	11,080	1973.50	2.64	4.50	7.14	471,718	100	.022	3900.00	.36	.82	----	----	.009
Platte	39,115,045	21,181	1846.70	2.64	4.16	6.80	744,066	1200	.14	15743.00	.74	2.12	----	30	---
Polk	22,127,000	10,092	2192.42	2.64	3.46	6.10	418,237	100	.024	2145.00	.21	.51	----	?	.009
Red Willow	14,092,094	13,859	1017.00	2.64	5.96	8.60	697,337	1190 nurse	.170	2757.00	.19	.4	180	----	.086
Richardson	29,288,218	19,826	1497.45	2.64	4.76	7.40	508,150	360	.07	7600.00	.38	1.49	----	189	.002
Rock	4,597,800	3,366	1365.95	2.64	5.00	7.64	87,320	25	.028	575.00	.17	.66	----	----	.007
Saline	30,934,850	16,356	1891.34	2.64	4.00	6.64	460,664	50	.011	2266.00	.14	.405	----	----	.003
Sarpy	17,328,138	10,402	1665.84	2.64	4.70	7.34	310,928	300	.096	1132.00	.109	.36	----	50	.03
Saunders	44,359,370	20,167	2199.60	2.64	4.70	7.34	863,104	1020 nurse	.106	4200.00	.208	.486	----	550	.045
Scotts Bluff	25,197,820	28,644	879.70	2.64	6.76	9.40	2,309,082	2480 nurse	.17	9944.00	.34	.426	700	----	.086
Seward	32,109,666	15,938	2014.66	2.64	2.50	5.14	398,584	?	?	2400.00	.15	.36	----	50	?
Sheridan	12,500,000	10,793	1155.00	2.64	4.86	7.52	653,264	50	.008	3376.00	.314	.52	----	----	.005
Sherman	12,041,205	9,122	1320.00	2.64	5.00	7.64	335,295	100 sc. ex.	.029	2893.00	.317	.86	----	----	.01
Sioux	7,668,454	4,667	1643.12	2.64	5.45	8.19	69,125	50	.073	1200.00	.25	1.74	----	35	.01
Stanton	20,000,000	7,809	2561.14	2.64	4.20	6.84	313,906	120	.038	1502.00	.192	.489	----	30	.015
Thayer	21,440,945	13,680	1567.32	2.64	4.70	7.34	329,997	125	.038	6911.00	.50	2.09	50	20	.0087
Thomas	2,704,347	1,510	1790.95	2.64	5.00	7.64	77,271	----	--	405.00	.268	.527	----	----	---
Thurston	13,131,194	10,462	1225.15	2.64	5.00	7.64	341,580	----	--	8030.00	.77	2.34	20	----	---
Valley	13,789,279	9,533	1446.47	2.64	5.00	7.64	277,571	----	--	2254.00	.237	.81	----	90	---
Washington	23,588,095	12,095	1950.23	2.64	4.50	7.14	573,091	1440	.250	1843.00	.15	.32	----	----	.12
Wayne	25,631,265	10,566	2425.82	2.64	3.56	6.20	329,804	----	--	2556.00	.24	.77	----	109	---
Webster	14,400,000	10,210	1410.38	2.64	4.44	7.08	197,148	100	.05	1665.00	.163	.84	70	----	.009
Wheeler	3,147,275	2,335	1347.82	2.64	5.00	7.64	43,095	----	--	1402.00	.60	.32	----	----	---
York	31,870,593	17,329	1848.75	2.64	3.46	6.10	523,111	950 t. b.	.181	4922.00	.28	.94	1150	3000	.055

*1936.

MATERNAL AND CHILD HEALTH

Continued from August issue of this Journal

B. LOCAL ADMINISTRATION AND ACTIVITIES (EXCLUDING DEMONSTRATIONS).

There are four health units now in existence. These are demonstration units only and have no legal authority under the present law. The district units consist of from three to four counties each. Each district unit is in charge of a medical health officer who is directly responsible to the assistant local health administration, and through him to the State Director of Health.

The staff of these units consists of a director, a sanitary officer, a clerk-stenographer, and at least one public health nurse for each county. Each of the four Demonstration District Health Units planned to be in operation during the ensuing year will have one senior public health nurse and four public health nurses.

(2) Provision is made in budget series MCH-4 for ten public health nurses, making an addition of five to the local nursing personnel for the fiscal year 1938. These nurses will be supplied from personnel now in training at the School of Hygiene and Public Health, University of Michigan. At present the (State) Department of Health qualifications for public health nurses require that a nurse be a graduate from an accredited school of nursing; registered in the State of Nebraska; physically qualified, with mental and personal aptitude; preference given to advanced academic training and/or experience in public health nursing.

The senior public health nurse shown on MCH-4 will be selected because of special aptness, ability, training, and experience. All of her functions will be under the medical director of the unit.

(3) Maternal and Child Health activities in each of the District Units will consist in a complete Maternal and Child Health program within the limits defined by the policies set up for the units by the (State) Department of Health. These policies provide for a completely generalized public health program in cooperation with local boards of health and other agencies without law enforcement status.

(4) The Public Health District Units will be administered by the Director of the (State) Department of Health through the Assistant Local Health Administrator, with local responsibility assigned to the director of the unit. The Director of Maternal and Child Health will be available for consultation regarding the Maternal and Child Health policies of the District Units and his services used freely.

c. **Activities of other State agencies related to the MCH program.** Members of the division staff will be available for consultation on all other related state programs including the Department of Education, the Board of Control, administrators of the program for state institutions, Child Welfare, and Crippled Children.

d. **Activities of private agencies.** Practically all of the private agencies which carry a Child Health program are represented either on the General Advisory Committee or on local committees. Special effort will be made during the coming year to correlate these programs with Maternal and Child Health activities and secure reliable data on all the work done by private agencies. These data are completely lacking at this time.

e. **Travel expenses.** The payment of travel expenses is governed by state law and policies laid down by the chief executive. All payment is made through an official voucher required to be notarized. Personnel who travel are furnished state-owned cars. Expenditures for lodging, car expenses, etc. must be shown on travel voucher supported by acceptable receipts. No flat allowances are made. Original vouchers are filed with the State Auditor and a copy in each instance is filed in the (State) Department of Health central administrative office. Present policy —verbal executive order—permits a maximum of five dollars for living expenses, with not to exceed $2.25 per diem for subsistence while in the field. No allowance is made for living at home station. A continued daily entry of $2.25 for subsistence calls for special investigation, it having been ruled as excess for routine.

Out-of-state travel ($250) has been budgeted for the purpose of enabling a representative of the division to attend a conference or conferences called by the Children's bureau. Provision is also made in limited amount ($250.00) for out-of-state travel to permit a division representative to attend a special conference or meeting that will be directly in the interest of the MCH program.

f. **Expenditures other than salary and travel.** Funds other than those budgeted for salary and travel will be used for literature, scientific equipment (including incubators) office supplies and other items necessary for the conduct of the work of the MCH Division.

4. **Reports to the Secretary of Labor.** This is mandatory by enactment of H. R. No. 20, Special Legislative Session, 1935. Obviously the Director of Health will comply with this requirement.

5. **Extension and Improvement of Local Maternal and Child Health Services.** Extension and improvement of local Maternal and Child Health services is shown under the heading "Methods of Administration" by the provision of additional nursing personnel in the District Health Units. This will be extended to any new units which may be set up. Local participation at present is at a minimum due to the unofficial status of local public health activities. In the absence of permissive legislation, local participation is of questionable legality. It is hoped that this condition will be remedied in the near future by the passage of suitable legislation. It is believed that the presence of the Demonstration District Health Units will stimulate these and other communities to form properly constituted health units, in which case extension of local Maternal and Child Health activities will proceed rapidly.

Indicative of the foregoing is the attitude expressed by prominent citizens and officials that hoped-for permissive legislation will be forth-coming so that their community can participate financially in the development and furtherance of this program.

6. **Cooperation with Medical, Nursing, and Welfare Groups** is provided principally through certain committees and among these are: (a) The General Advisory Committee. This is a large committee representing practically all of the organizations in the state which are interested in the Maternal and Child Health program. Minutes of the meetings of this committee are attached. Since the membership is so large and so scattered geographically it is not considered practicable to hold more than two meetings a year. Individual members, however, are consulted frequently. (b) The Committee on Medical and Health Education, Nebraska State Medical Association. This committee is charged with the duty of coordinating all additional activities of the State Association. (c) Committee on Specific Programs—each ranks as a subcommittee and their chairmen are exoffcio members of the large committee. This group, through its subcommittee on Maternal and Child Health, functions in an advisory capacity to the state health agency. Meetings are held on call of the chair-

man. This committee has been consulted regarding the 1939 plan. Since the General Advisory Committee has already met within the six months period it was not considered advisable to call them together for the purpose of considering the plan.

7. **Provision for Demonstration Services.** Two demonstration areas will be conducted and the service will be extended in accordance with the original plan.

Dundy County Demonstration Area. This demonstration was instituted to show the value of Public Health Nurses as a means of reducing the high infant mortality rate. The results have been satisfactory in view of the limited facilities available, but it does not seem advisable to conduct such a limited project in the presence of such pressing community needs. The demonstration will, therefore, be modified as shown below.

a. The program will be expanded to include all phases of Maternal and Child Health with special emphasis on prenatal and infant care.

b. The area will be the same as last year.

c. State personnel will consist of one public health nurse with special training in Maternal and Child Health work. Supervision by the state staff will be carried out by frequent visits of the director to the area and by monthly reports of the nurse.

d. The program and activities will be determined by a County Health Association, which has been organized with a definite membership and annual dues. This program will be subject to approval by the Division and the (State) Department of Health insofar as the activities of the state public health nurse is concerned. This association will choose from the list of Maternal and Child Health activities those which will be of greatest service to the community and which will provide the most economical use of the limited services available.

e. If and when a local agency is set up, the state service will become an integral part of the official agencies.

f. All local and private agencies now in existence will be represented in the County Health Association. County Demonstration area was instituted to demonstrate the value of public health nursing in reducing maternal mortality. This program will also be modified:

a. The program will be expanded to include phases of Maternal and Child Health with special emphasis on prenatal and postnatal care.

b. The area included in the demonstration will be the same as last year.

c. The state personnel will consist of one public health nurse with special training in Maternal and Child Health and will be supervised in the same manner as in Dundy County. (Reduction from two to one public health nurse over the program in effect under the 1938 plan).

d. The program will be determined by the County Health Association. The activities of the state public health nurse will be subject to the approval of the (State) Department of Health.

e. If and when a local agency is set up, the state service will become an integral part of the official agencies.

f. All local and private agencies now in existence will be represented in the County Health Association.

B. **PURPOSE FOR WHICH ALLOTMENT FROM FUND B IS TO BE USED.** As indicated on budget series, chiefly MCH-3c and MCH-4, the available state funds plus the amount of Fund A that can be taken advantage of are insufficient to conduct, extend, and improve a reasonably adequate program; hence all the available amount of Fund B will be necessary. This budget series also shows the exact purpose for which the allotment will be used. Were Fund B not allotted, it would be necessary to cut down the staff and temporarily deprive communities of the benefit of the very type of service which can be most useful and the more permanent educational phase.

C. **NEEDS AND RESOURCES OF STATE.** As has been pointed out in previous plans and communications, Nebraska has no local provision for health service outside of the metropolitan centers, nor is there any legal authority for same. This situation is well known and need not be dilated upon. On the other hand, distance is so great and population so sparce through the greater part of the state that a large central organization will be entirely impracticable. Local resources have been so depleted by the recent years of drought that even though legal authority was provided many counties would be reluctant to commit themselves for any considerable sum of money for health service. It is believed that the greatest service the state health department can render to Nebraska is to institute a program of education with local communities regarding their health needs and by a few demonstrations to show how those needs may be provided. This is necessarily a slow process in which progress may be imperceptible but which is nevertheless present.

In contrast to these needs Nebraska has some distinct assets. Among these may be noted a strong sense of local self-government which speaks well for the ultimate possibilities of local health work, if and when the resources and legal authority become available. Another distinct asset is a Medical and Dental profession which are alive to health needs and have set up strong organizations on a long-time basis to lay plans for meeting these needs. The recent organizations by the State Medical Association of a central Committee on Health and Medical Education, with seven subcommittees on specific subjects, represent a distinct advance in medical thinking. The Association also has a planning committee which is now conducting a survey of the public health resources of the state.

Nebraska with its traditionally conservative financial policy may seem to be progressing very slowly, but the ground work is being laid. The Maternal and Child Health program with its emphasis on educational activities is helping in this process.

An exact quantitative statement of public health needs is impossible at the present time, there being no basis for such an estimate.

P. H. BARTHOLOMEW, M. D.,
Ac. Dir. of Health.

HUMAN INTEREST TALES

Dr. Stanley Zemer vacationed in Colorado in July.

Dr. J. E. Uridil spent the early part of August in Colorado.

Dr. Claude Uren of Omaha spent two weeks in Wyoming.

Dr. and Mrs. Charles Swab of Omaha are in Newport, R. I.

Dr. and Mrs. Harry Flansburg of Lincoln are in Cass Lake.

Dr. and Mrs. J. C. Gillispie of Falls City vacationed in Minnesota.

Dr. and Mrs. J. J. Keegan visited Yellowstone Park in August.

Dr. and Mrs. I. C. Munger spent the latter part of July in Colorado.

Dr. and Mrs. Chester Thompson of Omaha vacationed in Colorado.

Dr. E. H. Luikart of Omaha, recently returned from a trip to California.

Dr. E. E. Koebbe of Columbus was in Michigan the latter part of July.

Dr. and Mrs. A. E. Gadbois of Norfolk vacationed in Minnesota in July.

Dr. and Mrs. Sven Isaacson of Omaha toured Wisconsin early in August.

Dr. and Mrs. J. Harry Murphy of Omaha are vacationing in Wyoming.

Dr. and Mrs. L. D. McGuire of Omaha spent ten days at Sun Valley in August.

Dr. A. J. Amick of Hastings has returned from a three months' stay in California.

Dr. and Mrs. Charles Moon of Omaha are spending their vacation in the Black Hills.

Dr. and Mrs. W. L. Rork of Hastings spent the first part of August in Minnesota.

Dr. and Mrs. George Alliband of Osceola vacationed in the Black Hills early in August.

Dr. D. O. Craig, a recent graduate of the University of Nebraska has located in Winside.

Dr. D. E. Dickinson of Ravenna was on a fishing trip in Wyoming the early part of July.

Dr. C. F. Heider of North Platte was on a fishing trip in Wyoming the latter part of July.

Dr. N. H. Rasmussen of Scottsbluff spent several weeks in St. Louis and Excelsior Springs, Missouri.

Dr. and Mrs. George Covey of Lincoln recently visited the Black Hills and other sections of Wyoming.

Dr. and Mrs. Harry E. Dorwart of Lexington vacationed in Ontario, Canada, the latter part of July.

Dr. L. F. Martinson, a Nebraskan formerly located is Portland, Oregon, has recently moved to Talmage to practice.

Dr. R. A. Newton of Genoa recently attended the Lions' convention in San Francisco. The doctor was a delegate from his local club.

Dr. Frederick O'Neill, Otoe, and his companion, Miss Margaret Morrissey, Omaha nurse, were seriously injured Thursday night when their automobile plunged off the black top of No. 2 two miles west of Dunbar.

Dr. Maurice D. Frazer, following a two years' internship in the Methodist Episcopal Hospital in Omaha, has become associated with the Scottsbluff Clinic.

MARRIAGES

Dr. W. I. McFarland, Hebron, to Miss Parline Charbnneau of Concordia, Kansas, June 5.

Dr. Burton W. Christie, Omaha, to Mrs. J. P. Zimmerman, June.

Dr. Beryl Hirshfield, North Platte, to Miss Ethel Ackerman of Omaha, June 12.

Dr. Delbert Reed, Ansley, to Miss Ruth Crosjean, Omaha, June 5.

Dr. Murray Westerbeck, West Point, to Miss Irene Graunke of Howells, June 15.

Dr. Frank J. Klabenes, Omaha, to Miss Lila Jourdan, June 12.

Dr. Kenneth R. Drewelow, Seattle, formerly of Stanton, to Miss Ann Boyd, June 30.

Dr. Harold Panzer, Omaha, to Miss Veta Premer, of Benkelman, June 7.

Dr. Robert C. Reeder, Fremont, to Miss Barbara Ann Penrod of David City, June 16.

Dr. Oswald Jensen, Lieutenant U. S. Army, formerly of Randolph, to Miss Lois Bailey of Neligh, June 24.

BIRTHS

To Dr. and Mrs. L. F. Egen of Hastings, July 28, a son.

To Dr. and Mrs. W. R. Hamsa of Omaha, July 20, a son.

To Dr. and Mrs. Willis D. Wright of Omaha, July 18, a son.

DEATHS

Dr. Gaylord M. Andrews, Auburn. Born in Jacksonville, Ill., he was brought to Nebraska by his parents in 1879. He graduated from Marion-Simms College in St. Louis, in 1898. He practiced at Nemaha and Stella until ten years ago when he located in Auburn. Died July 1, aged 71 years. He is survived by his widow and a brother, Dr. Harry Andrews of Minden.

Dr. P. L. Benthack, Chadron. Born in Germany in 1867, graduated from Kansas City Homeopathic Medical College in 1899. Practiced in Chadron since 1914. Died June 15, of heart disease.

Dr. William D. Gibbon, Rancho Santa Fe, Cal. Born in Weeping Water, Nebraska. Graduated from Sioux City College of Medicine in 1895 and for a short time practiced in Pittsburg. He then came to Nebraska to practice first locating in Lincoln. In 1910 he moved to Dunbar where he remained until 1937 when he retired to California. He died July 5 following a cardiac crisis, at the age of 64. Surviving are his widow and three sons.

Dr. Rudolph Rix, Omaha. Born at Fort Calhoun, Nebr. Graduated from Creighton Medical College in 1899. Dr. Rix was always an active participant in the activities of organized medicine, having taught surgery in his Alma Mater for many years. He was elected president of the Omaha-Douglas County Medical Society in 1935. He had enjoyed an extensive practice until about a year and a half ago when he suffered from a heart attack, which caused at first partial, then complete retirement from practice. Death came July 13, at the age of 67 years.

Dr. Rix is survived by his widow, a son, Robert, presently serving a residency in the New York Orthopedic Hospital, and a daughter.

Dr. Charles R. Kennedy, Omaha. Born in Platts-Mouth, he attended high school in that city. After graduating from the Omaha Medical College he established a practice in Omaha. He was for many years associated with the late Dr. August Jonas. Following the death of Dr. Jonas Dr. Kennedy became surgeon to Union Pacific Railroad, a post he occupied until the time of his death. He was professor of Surgery in the University of Nebraska Medical College and attending surgeon to the Nebraska Methodist Episcopal Hospital. Apparently in good health, he left with his family for a vacation in Minnesota. Death came suddenly in Nevis, Minn., following a heart collapse, August 29, at the age of 56.

The widow, a daughter, and a son Jack, now serving an internship at the University of Minnesota Hospital, survive.

Dr. Jerome McKinley, York. Retired. Born in 1861, Dr. McKinley graduated from Louisville, Ky., Medical College in 1891. Died in a Lincoln hospital August 7. He is survived by two daughters and two sons.

Dr. Henry D. Smith, Washington, Kan., formerly located in southern Nebraska. Graduated from the Lincoln Medical College in 1897. He located in Southwest Nebraska soon thereafter, and was widely known throughout that territory. Died July 18, at the age of 65. A widow and two daughters survive.

Dr. Carroll D. Evans, Sr., aged 82, died August 12, of conditions incident to his age. He was born in Pennsylvania, and a graduate of the College of Physicians and Surgeons, Baltimore, 1882. He came to Columbus, Nebraska, shortly after graduation, and practiced continuously in Columbus for fifty-six years. He was an honorary member of the Nebraska State Medical Association, a fellow of the American College of Surgeons, Surgeon for the Union Pacific and Burlington Railroads, and on the staff of St. Mary's Hospital. He is survived by his widow, two daughters, and two sons, both sons are physicians practicing in Columbus.

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Chronic Infectious Arthritis

Statistical Report of Findings and Treatment in 50 Cases

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A scientific device that has proved productive of much progress in the past two hundred years, has been the formulation of a hypothesis on the basis of suggestive evidence, and the attempt to prove by subsequent experiment, its truth or falsity. Recent medical literature has afforded material for a conception of chronic "atrophic," "infectious," or "rheumatoid" arthritis that can be organized into a practical working hypothesis. For the past five years, all patients conforming to this hypothetical diagnostic picture have been treated on the basis of the hypothesis. The total number of cases handled was 120. However, only 50 of these had records sufficiently complete, or cooperated adequately to permit of statistical analysis. It must be admitted that there is a possibility that some of the conclusions expressed here may be colored by experience with the other 70 cases.

The following is a summary of the hypothetical conception on the basis of which these cases were treated. It is based on a study of the appended bibliography, and was discussed at length in a previous article(5).

HYPOTHESIS

1. Arthritis is a constitutional disease, in which the joint findings are only one of a number of manifestations(1 6 7 8 16 18 25 28 32 36).

2. It is an allergic sensitization of the body cells to the proteins of the *streptococcus hemolyticus.* This sensitization is developed by long contact with the organism in what is commonly termed the "focus of infection." The focus exists for many years before the appearance of the clinical manifestations of the constitutional state herein called chronic infectious arthritis. The constitutional state and its clinical manifestations may continue to exist long after the focus of infection has been removed(1 6 7 15 29 43).

3. The sensitiveness of the body cells may remain latent for periods and produce no clinical manifestations, either because of therapeutic desensitization, or for no known reason. It can be suddenly or repeatedly stirred into renewed activity by contact with its antigen, the *streptococcus hemolyticus* from the environment by the same type of contact as spreads common colds. In this respect there is much analogy between the condition under discussion and tuberculosis.

4. This constitutional state has other manifestations than those in the joints; disorders of the heart, kidney, the hemotapoietic organs, the gastro-intestinal tract, the endocrine system. The various features may be present or absent to varying degrees in different individual patients. By corollary it is conceivable that a patient may have this constitutional disease which we call arthritis, and possess a certain majority of its clinical manifestations, but still have no joint disturbance.

TREATMENT

1. Interruption of the sensitizing contact between the *streptococcus hemolyticus* and the body cells: "elimination of the focus of infection."

2. Desensitization(43) of the patient's body cells, by means of parenteral injections of small and accurate doses of the antigen. A technic for the preparation of autogenous vaccines involving especially ease of isolation and rapid and abundant growth of the organism, has been discussed in a previous article(4). In the desensitization technic for the use of vaccines, only so large a dose is employed as would theoretically exhaust the patient's supply of antibody. In practice, this

amount is found by keeping down the number of organisms injected to between 500 and 5,000; and by avoiding clinical "reactions" which aggravate the original symptoms or cause the patient discomfort. The size of the dose varies with each patient and from time to time in the same patient. The patient's tolerance to autogenous vaccines on this basis quite as frequently decreases as it increases during the course of treatment. The enormous doses that were employed when vaccine treatment originally came into use, are avoided because experience shows that they do harm instead of good; and theoretical considerations suggest that they produce a re-sensitization of the same character and comparable in amount, as did the original focus of infection.

3. Thorough attention to nutritional features(2 18 21 42): in this respect the treatment is comparable to that of tuberculosis. Rest forms an important part of it, as it does of the treatment of any debilitating constitutional disease. In the diet, attention is given to the supplying of abundant protein and vitamin, and the avoidance of clogging the metabolic mechanisms with needless energy and storage-foods. The theoretical basis for this is that the readjustments among the tissues involved in the patient's cure require molecules of protein and vitamin; carbohydrate and fat molecules are of negligible assistance in this process. The body at rest requires but little energy-food and one fed regularly requires no storage-food.

Along with nutritional considerations might also be grouped the correction of all other physical defects, for the purpose of removing all obstacles to the reestablishment of constitutional equilibrium.

4. The treatment of associated pathological conditions, and symptomatic attention to the other clinical manifestations of the constitutional state termed arthritis; more especially anemia, and dysfunction of heart, kidney, and endocrines.

MATERIAL

No cases were included in the series in which the joint involvement was so far advanced as to constitute an orthopedic problem. Otherwise, the cases are such as consecutively presented themselves in a general internist's practice, complaining of joint-pain, and fulfilling the set of diagnostic standards given below.

In a statistical study of the cases treated there seems to be no predilection for any age-period, the bulk of the cases occurring in people at the ages when they are most subject to the stresses of life and exposed to the subtle and largely unrecognized infectious factors of a civilized life led indoors. The weight curve suggests no relation of the disease to body weight, showing the average normal distribution of weight that would be found in any similarly chosen group of persons. The large preponderance of "housewives" among the occupations, merely suggests that most women are still engaged in that occupation.

DIAGNOSTIC CRITERIA

1. Mere pain in the joints cannot be accepted as pathognomonic of the condition here postulated as chronic infectious arthritis. This symptom was, however, the leading or presenting symptom in all but a few of the cases; and in these few it was elicited in the first attempt at history-taking or in the first examination.

Pain in the interarticular muscles of the extremities must be interpreted with caution(3 27). It is common to find such pain in arthritis, due to reflex effort to hold a joint in the most comfortable position or to avoid a joint position which produces pain.

2. No case was included which did not possess acute tenderness in a joint, elicited by making firm pressure at opposite points on the circumference of the articular surfaces.

3. Peri-articular soft-tissue swelling without bone changes in x-ray films.

4. Atrophic changes in the articular ends of the bone.

5. The presence or history of a focus of infection. The following foci were routinely considered as possibilities and sought for: Teeth, tonsils, nasopharynx, paranasal sinuses, middle ear, bronchi, gallgladder, appendix, cecum, colon and sigmoid, prostate and vesicles, cervix uteri, anal glands and crypts.

6. The recovery of the *streptococcus hemolyticus*, and a demonstration of the patient's sensitization to it. As a method of accomplishing the latter, agglutination was found unsatisfactory, both in the literature(12 14 29) and on personal trial. The patient's reaction to intradermal inoculation with the killed organisms was found to be the most satisfactory method. The reaction was found to consist of three components:

a. Focal: improvement or aggravation of symptoms, confined to the involved joint. This sign was considered specific.

b. Local. In the dosages used, the local reaction was insignificant, and furnished no information of value. With heavier doses, skin reactions became distinctive; but these dosages could not be used because of unpleasant focal and systematic effects.

c. Systematic: headache, nausea, abdominal cramps, malaise. These symptoms were always slight, but uniform in the series. Normal controls showed no such symptoms in response to similar dosages, which were always between 100 and 5,000 killed organisms.

7. A shift to the left in the Schilling count(34 38 39).

8. Increased sedimentation rate of the erythrocytes(34).

9. The presence of metabolic disorders, largely dependent on thyroid function(20 35).

Not all of the above nine findings were required to be present in a given case in order to include the patient in this diagnostic group. However, no case was included unless criteria 1, 2, 5, and 6 were present.

CLINICAL FINDINGS

The blood-pressures of the fifty patients constitute an essentially "normal" or Gaussian curve, indicating a distribution about the same as would be found in a similarly sized group selected at random. The temperatures were read after leaving the thermometer in the patient's mouth for fifteen minutes, and were averaged over several weeks' observation of the patient. Elevation of temperature is not a prominent feature of the group.

The distribution of cases among constitutional types is about even.

It has been interesting to note the absence of anatomical lesions in the joints in the majority of cases. It must be kept in mind that joint tenderness was one of the critera of selection of the group. Our study strongly suggests that actual changes in the bone about the joint require considerable time for their production, whereas periarticular soft-tissue lesions are not related to the known duration of the disease. This again leads us to an analogy with tuberculosis, well established as an allergic process, with an "incipient" stage, and with progressive stages connected with the quantitative anatomical extension of the pathological lesions. The anatomical pathology is to some extent, but only partially, a function of the chronological duration of the disease; it is probably also a function of the patient's allergy.

The leucocyte counts again constitute a "normal" or Gaussian curve, with a distribution such as might be found in an unselected group of people of approximately the same number. The sedimentation rate as a diagnostic procedure has been under observation long enough to justify our assumption that a group of normal persons ought to present almost one hundred per cent of normal sedimentation rates. The fact that 48% of this group were found with increased sedimentation rates, suggests a connection. The differential leucocyte count on Schilling's basis, is considerably more definite; by far the majority of the cases is found below the heavy line, which indicates the 10% of band (or staff) forms that has been observed as the upper limit of the normal.

The problem of "anemia" in connection with arthritis has turned out to be interesting. The erythrocyte counts give a curve that closely resembles that of a random group of the population. The hemoglobin, however, shows a majority of the values below 90%. In these readings, 17 grams of hemoglobin per 100 c.c. of blood is taken as meaning 100%. The determinations were made by the Sahli method. In an investigation by Rosalie Breuer carried on concurrently and not as yet published, the Sahli method was found to give hemoglobin results 10% below that of the Wong iron method by colorimetry; and that the Wong method represents the amount of hemoglobin incompletely. The actual oxygen-carrying power of the patients in the series must therefore be definitely lower than the given figures. The color indexes are low in a majority of the cases.

Attempts were made to correlate the degree of hypochromic anemia with the duration of the disease, with the possibility in mind that progressive damage to the hematopoietic organs similar to progressive bone damage, might be suggested and might be considered as a function of the patient's allergy. No such correlation is found; the hypochromic anemia is as frequent and severe in the chonologically early cases as in the long-standing ones.

The fact that many of the cases have gone a considerable number of years without developing deformities, added to the generally known fact that it is not infrequent for cases to develop deformity within a few weeks or months of onset, confirms the previous observation that other factors than time are concerned in the progress of anatomic pathology. The degree of the patient's sensitization to the causative organism suggests itself as the most probable explanation.

The "foci of infection" previously referred to are lesions from which it was possible to isolate the *streptococcus hemolyticus*, to which the patient reacted positively, as above indicated. The nine cases labeled "Focus Not Found" were not all completely free from foci of infection; but either the *streptococcus hemolyticus* could not be grown, or a strain was obtained to which the patient did not react. An autogenous vaccine was made from each of the other 41 cases and used in treatment. In the nine cases, treatment was carried on with a mixture of vaccines made from the other 41, after sensitization to the mixture had been confirmed by test.

TREATMENT AND RESULTS

The statistical reports of the treatment are largely taken up with the use of autogenous vaccines, there being little to comment about in the other features of the treatment.

The total number of injections was 2,000. 84% of the cases received 50 injections or less. The proportions of the total number of cases receiving numbers of injections less than 50, are rather evenly distributed, 16% receiving 10 injections, 14% receiving 30 injections, and 16% receiving 50 injections.

Of the 50 cases which were under treatment, five were complete failures. Of these, two were under treatment for 6 months or less, and the remainder for one year or more. It is probable that short periods of treatment indicate "cures" within those periods. Records of patients who discontinued treatment because of unwillingness to cooperate, are not included in the series. It is probable that long periods of treatment indicate sufficient improvement to afford encouragement to the patient to keep him persisting in the treatment.

An attempt was made to correlate the amount of treatment with the character and quantity of results produced. Improvement is defined as:

a. Relief of, or substantial decrease in joint pains and tenderness.

b. Disappearance of, or decrease in amount of anatomical manifestations, as swelling, enlargement, or x-ray findings.

c. Satisfactory progress in status of associated manifestations, such as underweight, overweight, anemia, abnormal metabolic rate, heart and kidney conditions.

d. General increase in feeling of well-being, strength, and endurance.

Degrees of improvement, as referred to in the tables and graphs, are defined as:

a. Prompt and complete achievement of all of the above results.

b. Slow or partial achievement of the same.

c. Satisfactory but temporary accomplishment of these results, with periodical recurrence after a usual interval of some months, always satisfactorily amenable to the same treatment.

d. Complete failure.

The amount of improvement does not correlate with the amount of treatment. The heaviest volume of improvement is to the left of the middle; the amount of treatment (abscissae) begins at the left at zero and increases toward the right. However, most of the failures are also in the left half. The average number of vaccine injections in 5 failures was 42.0; in 41 cases which received relief, 31.7; in the total series, 42. In attempting to interpret these phenomena, the fact must be kept in mind that improvement does not depend wholly upon vaccine treatment, but also on the other factors mentioned.

There has been one observation in connection with the five years of effort with the 120 cases, that does not lend itself to statistical expression, but that has been so consistently present that it appears nothing short of remarkable. That is the property of the autogenous vaccine, injected intracutaneously in amounts so small as to appear ridiculous, to relieve the patient's joint pain and tenderness. Whatever the mechanistic explanation of the phenomenon, its objective occurrence has been so impressive, both to patients and to medical personnel, as to make it difficult to restrain enthusiasm within scientific bounds.

The only explanation of this observation that is consistent with our assumed hypothesis, is the following: Joint pain and tenderness is caused by ischemia. This much has been experimentally demonstrated by Pemberton's ligation experiments. Localized vascular spasm is an allergic phenomenon, and could readily cause the required degree of ischemia. The relief of the allergic reaction by desensitization relieves the ischemia, and the resulting pain. At present, this explanation is partially speculative.

The diagnostic findings did not indicate that arthritis is connected in any way with constitutional types; the distribution of failures and retarded successes among the constitutional types, confirms this. The retarding influence of psychic states as found in our study merely expresses the difficulty of instituting proper therapeutic measures in these cases.

SUMMARY AND CONCLUSIONS

1. A hypothesis as to the nature of chronic in-

fectious arthritis is presented, and a statistical report of 50 cases treated on the basis of it, is given.

2. Diagnostic criteria for the hypothetical condition are stated.

3. A statistical report is made of the diagnostic findings.

4. An outline of the treatment is submitted.

5. A statistical report of treatment and results is rendered.

6. There seem to be no gross inconsistencies in the therapeutic experience with the hypothesis. The results are encouraging enough to stimulate further effort.

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Torsion of the Great Omentum*

With Report of Two Cases

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Torsion of the omentum, while not one of the rarest of surgical lesions, is sufficiently uncommon to have largely escaped the careful consideration of medical men in general. One seldom hears the condition mentioned when the differential diagnosis of an "Acute Abdomen" is under discussion. Even more amazing is the fact that for years this entity has been ignored, or but briefly mentioned by Surgical Texts. Recognition of its importance appears to be on the increase however, as a discussion of it is now found in the sixth edition of Thomson and Miles Surgery, it has found a place under the "Differential Diagnosis of Appendicitis" in Lewis Surgery, and current literature of the past decade takes additional cognizance of its real status.

DEFINITION

Torsion of an organ may be defined as a pathological twisting or turning on its long axis, thus producing strangulation of its tissue. Examples of torsion are most frequently seen in ovarian cysts, intestinal volvulus, spleen, uterus. Fallopian tubes, appendix, and gall bladder. Torsion of the omentum occurs quite as frequently in the omentum as in some of the above organs and yet is almost never diagnosed prior to laparotomy.

HISTORY

Marchette, a Frenchman, was credited by Aimes(15) with reporting the first case of torsion of the omentum in 1851. Oberst(16) reported the second case in 1882, and his is the first available record in medical literature. Eitel(11), in 1899 was the first to report the condition unassociated with hernia, which was previously held to be a constant etiological factor.

This condition seems to have received but scant attention until 1905 when Corner and Pinches(10) made an exhaustive analysis of 54 cases, 51 compiled from the literature, and 3 of their own. Inguinal hernia was present in 90% of these cases, thus focusing attention upon hernia as the important etiological factor. Only 10% of this series were of the Primary type, or unassociated with hernia or other intra-abdominal pathology. McWhorter(9) in 1928 was able to find the report of but 24 cases of Primary Torsion in the literature, and added two of his own cases. This excellent work stresses the intriguing theories relative to the obscure etiology of Primary Torsion, including the classical experiments of Payr.(17) D'Errico(13) in 1930 was able to collect but 29 cases of Primary Torsion in the literature, and added two case reports, one of his own and one of Germain's. Morris'(4) article in 1932, reveals the reports of 221 cases of torsion of all types, to which are added 59 cases from the literature and two cases by the writer, (one of the Primary type), making the total reported cases to date 280. A search of the literature since D'Errico's report in 1930 of 31 cases, reveals 23 reported cases of the primary type, to which is added one case of the author's, making the total number of Primary cases reported to date 54, or 19.28 per cent of the total reported cases of all types. This large percentage of cases of the Primary type may very likely be explained by the more frequent reporting of this type and the lack of reporting of the more common cases of the Secondary type.

PATHOLOGY

The result of torsion of the omentum, will, of necessity, depend upon the severity and the duration of the circulatory impairment of the involved area. It is recognized that temporary and minor twists do occur and recur, with spontaneous relaxation before serious damage is done. However, repeated twists of this nature result in vascular changes, edema, fibrosis, and local omental thickening, thus forming the so-called "omental ball", which in turn facilitates the production of the twist or torsion.

Upon examination of the omentum it may vary in color from red, through purple, to almost black. A pedicle of inconstant thickness may or may not be present. The number of twists may range from one to eight or even more; and any portion, or the entire omentum may be strangulated. Three stages of strangulation have described by McWhorter(9). The first stage is that of congestion and venous stasis; the second, extravasation of blood, infarction formation, and thrombosis of blood vessels; the third, necrosis or gangrene. The appendix, gallbladder, intestine, peritoneum, or any organ adjacent to the omental volvulus may be adherent to or involved in the inflammatory process.

CLASSIFICATION

Several different classifications of omental torsion appear in the literature, probably the most detailed and comprehensive being that of Morris.(4) However, there are two basic varieties, namely (1) torsion associated with other pathological conditions, such as hernia, and (2) torsion arising independently of other causes. A practical workable classification is that of Cowell,(18) which is as follows:

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1. Abdominal
   (a) Primary, with no apparent cause.
   (b) Secondary, associated with diseases of an abdominal or pelvic organ.
2. Hernial
   (a) Intra-saccular.
   (b) Intra-abdominal.
   (c) Combined.

ETIOLOGY

The generating factors in the production of omental torsion are usually obscure, hence speculation has produced many theories in an attempt to explain this condition. Among these are (1) anatomical abnormalities in the omental blood supply, (2) previous inflammation resulting in a thickened omentum, (3) obesity, (4) interference with the lymph flow, (5) abnormal peristalsis, (6) trauma, such as sudden strains or blows, (7) congenital anomolies, and (8) the pressure of abdominal tumors.

The presence of hernia in approximately 50% of cases of omental volvulus, (other than the Primary type), leaves little doubt as to the very definite relationship between these two conditions. In the hernial type the omentum recurrently forces itself into the hernial sac and back again into the abdomen, resulting in a low grade inflammation and a thickening of the dependent margin. Because of the constant motion and the increased dependent weight, there results a rolling and the initial twist. Venous stasis and added blood volume increase the weight of the pre-existing mass, thus establishing a vicious circle, which facilitates the formation of additional twists. There is no record of omental torsion existing in the presence of femoral hernia.

Payr(17) expounded the most ingenious explanation of the cause of Primary Torsion. The omental veins are much larger and more tortuous than the arteries, and when compressed, quickly become engorged. The arteries, in attempting to propel the column of blood, become tense cords, about which the omentum becomes twisted, which further hampers the circulation and aids in additional rolling or twisting. There results congestion and venous stasis, extravasation of blood, infarction, and necrosis, (McWhorter(9)). The overlying parietal peritoneum not infrequently shows redness and thickening due to edema and the infiltration of red and white blood cells.

SYMPTOMATOLOGY

A "crampy" pain, most frequently in the right lower abdominal quadrant, of an acute, progressive, and persistent nature, increased by movements or pressure is usually the first and outstanding complaint. This pain may vary in intensity but is not of the peristaltic type, usually does not radiate, and often is preceded by indefinite abdominal discomfort of several days duration. An important observation in many of these cases is the history of the pain having followed some unusual physical effort, such as heavy lifting, a blow upon the abdomen, or a fall. This condition is more commonly seen in well nourished robust, or obese adult males. Vomiting may or may not be present, and it may occur before or after the onset of pain.

Tenderness, muscle spasm and rigidity are rather constant findings, the tenderness frequently being exquisite over the site of the omental mass. Abdominal excursion during respiration is dismissed. A palpable tumor, which appears suddenly, is found in 40 to 50% of the cases. This tumor is usually movable, very tender, often elongated, and surrounded by a tympanitic percussion note. Muscular spasm with rigidity and distention may render impossible the palpation of the tumor. The temperature may be elevated from one to three degrees, together with a moderate acceleration of the pulse rate. A leucocytosis of 12 thousand to 20 thousand, averaging about 15 thousand is usually present. Symptoms of bowel obstruction are lacking unless the intestine becomes entangled in the omental twist. The history and presence of an inguinal hernia, in addition to this clinical picture, should cause the clinician to strongly consider omental volvulus as a very real possibility.

DIFFERENTIAL DIAGNOSIS

Omental torsion is very rarely diagnosed prior to operation, largely due to the fact that the condition is seldom considered by clinicians or surgeons in making a differential diagnosis. This in turn, may likely be traced to its perfunctory mention, if at all, in medical teaching and in text books. Morris(4) cites the pre-operative diagnosis in 217 cases of omental torsion in which the correct diagnosis was made in only eleven (7.9%), and 72% of these diagnoses were made in the presence of hernia. The preoperative diagnosis of acute appendicitis far overshadows all others in cases of torsion, followed by acute cholecystitis, and ovarian cyst with twisted pedicle. In addition to these, practically every intra-abdominal surgical condition has been diagnosed erroneously prior to finding an acute omental volvulus.

Granting that it is frequently difficult, especially in the absence of hernia, to distinguish between torsion and acute appendicitis, there is a certain clinical picture which should definitely direct one's attention to the consideration of torsion—namely the sudden onset of a severe, persistent, "crampy" pain increased by motion, in the lower right abdominal quadrant in a middle-aged robust or obese male, subject to frequent trauma or strain; accompanied by exquisite localized tenderness, which is out of proportion to the other symptoms, and the rapid development of a large mobile mass, and free fluid. The presence of hernia is an important clue especially should a previously symptomless hernia suddenly become enlarged, painful, and irreducible, with a simultaneous development of a tender mass in the lower right quadrant. Nausea, vomiting, rigidity, and leucocytosis, are, of course, common to many conditions, and are merely the reflection of the degree of peritoneal involvment. Upon opening the abdomen the presence of bloody fluid makes search for an omental torsion mandatory.

In Table No. 1 are enumerated the conditions most commonly confused with omental torsion.

TABLE 1 DIFFERENTIAL DIAGNOSIS

Acute Appendicitis
Appendiceal Abscess
Appendicitis with Peritonitis
Cholecystitis
Torsion of Ovarian Cyst
Inguinal Hernia
Strangulated Inguinal Hernia
Intestinal obstruction
Omental Hernia
Omental Thrombosis
Torsion of Uterine Fibroids
Torsion of Spleen
Torsion of Spermatic Cord
Acute Salpingitis
Ectopic Kidney
Ruptured Viscus
Ectopic Pregnancy
Tuberculosis of Cecum

Table No. 2 presents features that should be helpful in differentiating between Acute Appendicitis and Torsion of the Omentum.

TABLE 2—DIFFERENTIAL DIAGNOSIS OF ACUTE APPENDICITIS AND OMENTAL TORSION

	OMENTAL TORSION	ACUTE APPENDICITIS
Age	Usually active adults	Any age
Sex	Nearly all males	Little difference
Pain	Crampy—starts in R. L. Q.	Often onset mid-abdomen
Nausea-Vomiting	Less frequent	More frequent
Pulse	Not distinctive	Not distinctive
Temperature	Not distinctive	Not distinctive
Tumor	Early diffuse mesial-mobile	Late circumscribed-lateral-immobile
Tenderness	Exquisite	Less marked
Rigidity	Not distinctive	Not distinctive
Percussion	Dullness	Resonant
Leucocytosis	12 to 20.000	12 to 20,000
Hist. of Trauma	Commonly associated	Unrelated
Hernia	Frequently associated	Unrelated
Bloody Peritoneal Fluid	Almost constant	Absent

TREATMENT AND PROGNOSIS

The treatment of omental volvulus is prompt and early operation. Sero-sanguinous or bloody fluid will likely be encountered; the appendix may display considerable injection and edema, and the strangulated omentum be therefore overlooked. Simple reduction or untwisting of the volvulus is insufficient, because of the likelihood of recurrence. Resection of the involved portion must be done, carefully ligating the blood vessels, together with careful suturing of the edges of the omentum. Strict search for omental bands and adhesions should be made, and if found, eliminated. The presence or absence of intestinal obstruction should be determined, and great care must be observed in resecting the omentum, not to damage the blood supply to the colon. The omentum should be left as smooth as possible and drainage is usually unnecessary.

Recovery of these cases is the rule if early surgery is instituted. The most commonly reported causes of death are pneumonia, pulmonary embolism, intestinal obstruction, and peritonitis in the late cases with gangrene.

CASE REPORTS

Case 1. A. H. White, male—single—age 33—admitted Feb. 13, 1934.

Onset of generalized abdominal pain with nausea, three days prior to admission. Continued at work as a salesman, though pain was almost continuous, and was accentuated by movements or riding in a car. There has been some tenderness over the entire abdomen since the onset of pain. On the day of admission had to stop work because of severe generalized pain and extreme tenderness in right lower quadrant of abdomen. Had usual childhood diseases and has had a rather large right inguinal hernia for the past several years. Has been a heavy eater and has used alcohol rather freely for several years. Examination revealed an obese white male of 33 years—florid complexion—height 70 inches—weight 210 pounds—temperature 99.2—pulse 92, full and bounding—blood pressure 128/73—acutely ill—head, neck, and chest negative. Abdomen obese, slightly distended, no palpable mass, rigidity grade two in right lower quadrant, large complete, easily reducible, right indirect inguinal hernia. Leucocytes 18,200. Was able to void prior to operation.

Diagnosis: Acute Appendicitis, probably with peritonitis.

Operation: Feb. 13, 1934, 6 p. m. Upon opening the abdomen there presented a large amount of bloody fluid which was withdrawn by suction. There was a huge tumor of the omentum extending from the lower right margin to the epigastrium. This tumor consisted of edematous, thickened, and inflammatory omental tissue, resulting from a volvulus situated near the upper border. There were six complete twists at this site. There was marked distention of the blood vessels above the volvulus. Multiple enlarged inflammatory lymph glands were scattered throughout the omentum. Appendix was posterior and not inflamed. The omentum was not attached to the inguinal region. There was some bluish discoloration of the transverse colon, which promptly returned to normal after the relief of the pressure. It was necessary to resect practically the entire omentum, which was done, the entire procedure requiring 50 minutes. The patient left the table in fairly good condition, but with a pulse rate of 150 of good quality. No drainage. A note was made "Prognosis guarded, as patient is an obese alcoholic, and not a good risk."

Pathological report: (Dr. J. Marshall Neely). Grossly the specimen consists of an appendix measuring 5 cm. in length and 8 mm. in diameter and a large mass of omentum which appears to be thickened and indurated. This piece of omentum measures about 15 cm. in its greatest diameter and on cut section is distinctly hemorrhagic. The appendix shows little of note from a gross standpoint. Microscopic sections of the appendix show the walls and serosa to be fairly normal in appearance and the mucosa shows nothing remarkable. Sections of the omentum show a diffuse necrosis which has the appearance of histological change due to ischemia.

Diagnosis: Appendix; Strangulated omentum.

Progress: Abdominal distention appeared about 24 hours after operation, but was easily controlled by duodenal suction. Condition satisfactory until fourth post-operative day when cyanosis, rapid pulse, cardiac dilitation, and other evidences of circulatory decompensation became evident. He expired in approximately 14 hours after the onset of these symptoms.

Case No. 2 R. H. white male—age 27—married—admitted Nov. 7, 1937. Four days previously began to have severe pain in right side of abdomen—this pain has steadily grown worse, becoming very severe, and "doubling him up" a short time ago. The jolting of walking or riding in a car increase the pain. Epsom Salts were taken last night. Complains of extreme tenderness in right lower quadrant. There has been no nausea or vomiting. No prior attacks. Right inguinal herniorrhaphy 1932.

Physical examination shows a well-nourished adult white male of 27 years. Head, neck, and chest negative. Walks, stands, and sits with body bent forward, protecting right side of abdomen with hands. Is acutely ill. Exquisite tenderness grade 4 in right lower quadrant, with rigidity grade 3—definite sense of fullness in McBurney's area—is slightly tender on left side—inguinal rings negative—Operative scar right inguinal region—temperature 98.8—pulse 86—leucocytes 16,850—urine 1.030—Acid—trace of albumin—occasional red and white blood cells.

Diagnosis: Acute Appendicitis—(abscess?).

Operation: Right rectus incision—Upon opening the peritoneum there was the escape of a small amount of sero-sanguinous fluid—in the lower right area of the omentum there was a purplish-red thickened edematous gangrenous mass measuring 3x3x½ inches which was hanging free in the abdomen. Above this mass were four complete twists of the omentum. The appendix was somewhat inflamed, thickened, and buried old adhesions. A resection of the gangrenous portion of the omentum was done, together with an appendectomy. Usual closure without drainage.

Pathology: (Dr. J. Marshall Neely)—The appendix showed nothing remarkable. The omentum is thickened and indurated and measures 15 cm. in its greatest diameter and on cut section is distinctly hemorrhagic. Microscopically the omentum shows a diffuse necrosis. Diagnosis: Strangulated omentum.

Progress: The patient made an uneventful recovery and was dismissed on the tenth post-operative day.

SUMMARY

1. Attention is directed to the meager mention of omental volvulus in medical texts and curriculi, its infrequent consideration in differential diagnoses, and hence the extremely small number of cases that are correctly diagnosed preoperatively.

2. An attempt is made to describe "the torsion type" of patient, with the most characteristic symptoms and findings, that will aid in more ready recognition of this condition. A table of symptoms and findings in volvulus and acute appendicitis is presented.

3. The rarity of cases of primary torsion as compared to the number of cases of secondary torsion is emphasized, also the great frequency with which inguinal hernia is found in conjunction with omental volvulus.

4. The literature containing case reports of the two types of torsion is reviewed, and two additional cases are reported.

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Paranasal Sinus Disease in Children*

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In view of the prevalence of infections of the ear in children, it seems unreasonable to suppose that diseases of the nasal sinuses should be rare in early life, for the middle ear with the Eustachian tube communicating with the nasopharynx is merely a specialized air sinus. The relation of the sinuses to the respiratory tract proper are the same as the middle ears. Each opens directly into the upper respiratory tract. The ear is connected to the pharynx by a tube; the sinuses, by windows communicate with the nose. Swelling of the mucosa easily blocks the Eustachian tubes, thus interfering with drainage and producing symptoms which direct attention to the ear. The same amount of swelling does not block the ostia of the nasal sinuses and the symptoms are not so marked. For this reason infection of the sinuses is often overlooked.

In considering paranasal sinus disease in children, it is important to know what factors prepare the tissue for infection as well as the infection itself; that is, such constitutional factors as allergy, deficient diet, and other conditions that lower the general resistance of the patient, as well as local obstruction and stagnation with resulting secondary infection. The etiological factors of chronic sinus infection are numerous and complicated. Dean(1) mentions the following: deficient diet, poor hygiene, allergy, nephrosis, metabolic disturbances, malnutrition, climatic conditions, lack of sunlight, swimming, endocrine disturbances, diseased tonsils and adenoids, the contagious diseases, and local obstruction. Any swollen membrane about the sinus ostium, the blocking of the ostium by a foreign body, a swollen turbinate, a tumor of the nose as a polyp, or anything that causes stagnation of mucus in the sinuses, always results in infection. In nephrosis and allergic conditions, if the edema is sufficient to cause stagnation, infection will soon set in.

On an anatomical basis the nasal sinuses always have clinical significance at birth. The ethmoidal cells are always present at birth. The maxillary sinuses are only rarely absent. Sinuses in children are very precocious in their development and any or all of them may be of clinical significance as early as the first year of life. Cases of orbital cellulitis secondary to ethmoidal and maxillary sinus infection have been reported in infants as young as three weeks (Looper(2)) For this reason x-ray examination should be made early in the study of the patient rather than have it follow the complete clinical examination as in the adult. This is important in order to determine which sinuses are present, their size, and whether they are of clinical importance. X-ray examination often reveals a thickened membrane or complete blurring. This does not necessarily indicate infection but may be an edema, the result of an allergic reaction. In the early stages of nephrosis blurring of the sinuses is always part of the general edema, and there may be no infection of the sinuses at this stage. If there is sufficient edema to block the ostia, stagnation results, followed by a secondary infection later.

Infection in the sinuses is not always manifest as in cheek abscess and orbital cellulitis but often is latent, associated with constitutional symptoms with few nasal complaints. Any general complication in which a chronic focus of infection is suspected as a cause should lead to thorough study.

In cases of malnutrition, chronic arthritis, chronic bronchitis, bronchiectasis, and other systemic infections, often the child's general condition is markedly improved by the removal of infected tonsils and adenoids. However, the infection causing the trouble is not always present in the tonsils, or at least is not limited to the tonsils. Very suggestive of chronic sinus infection is a condition characterized by listlessness, poor appetite, underweight, and poor color, so commonly caused by diseased tonsils and adenoids with a negative report from the pediatrician so far as a systemic condition is concerned. In every child where the removal of the tonsils and adenoids does not give the desired result, the sinuses should be carefully studied. Looper(2) reported ten cases where the tonsils and adenoids were removed two to three years previously with no relief of the local symptoms, as frequent colds, nasal discharge, and mouth breathing. Infection was found in the sinuses and responded satisfactorily to treatment.

In acute involvement of the sinuses, the predominant symptoms are nasal stoppage or a feeling of fullness in the head with nasal discharge. There may be pain and headache, especially if a closed empyema is present. In acute frontal empyema, pain on pressure of the floor of the frontal sinus is often elicited. Nasal blockage, headache, anterior and posterior discharge, mouth breathing, recurrent head colds, sneezing, and cough, alone or in combination, are often presenting symptoms in chronic sinus infection.

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Examination of the nose and paranasal sinuses should include the following procedures. Anterior rhinoscopy may reveal local obstruction and discharge. A small mirror can be used for postnasal examination in older children. The nasopharyngoscope is valuable in infants and young children, particularly to note the presence of pus in the middle meatus and sphenoethmoidal areas. A smear should be made of the nasal discharge and stained with Wright's stain for cytological study. The presence of a large number of pus cells signifies infection; a predominance of eosinophiles may indicate allergy. X-ray examination should be done early. Evidence of external edema of the eyelids and cheeks and sinus tenderness should be noted. Posterior cervical adenitis is often present with sinus infections in children. If the urgency warrants, and particularly in the latent type with indefinite local findings, endonasal puncture through the inferior meatus and aspiration, and a cytological and bacteriological examination made of the washings from the maxillary sinus is indicated (Dean(3)). This is an accurate procedure for the diagnosis of maxillary sinus infection. Often it is advisable to do the endonasal puncture at the same time the tonsils and adenoids are removed when there is evidence of sinus infection present. Many times this combination is sufficient to produce complete relief of the sinus condition.

Cooperation between the otolaryngologist and the pediatrician is necessary for diagnosis and to outline the treatment. The pediatrician knows best the child's general condition and when best to recommend operative procedure.

The best results are obtained in sinus infections by proper nose and throat treatment along with pediatric care. Attention to the predisposing factors with proper hygienic care and diet and the most simple nose and throat treatment will control the majority of sinus infections in children without operative work on the sinuses. In the greater percentage of sinus infections in children requiring operation, the procedure in the nose is limited to removal of obstructing lesions and windows in the inferior meatuses for ventilation and drainage.

If the inflammation is infectious, is treated promptly and thoroughly, either medically or by conservative surgical measures as found indicated, the condition will generally subside. If the infection progresses untreated to the chronic stage and especially if the sinus inflammation is a local manifestation of a general systemic allergy or other dysfunction, then the sinus condition will probably persist until the underlying cause is removed. The treatment of an allergic nose is allergic. To operate for the allergic condition which will disappear with treatment is not justifiable. If infection is present, treat it.

The aim of all local treatment of the sinuses is to obtain ventilation and drainage. This should be accomplished by the simplest method possible with the least trauma to the nose and sinuses. Acute suppurative sinusitis yields readily to treatment even when it accompanies an acute infectious disease. At times, however, there is rapid involvement of the bone with complications in the orbit or neighboring parts. These yield well as a rule to surgical procedure.

In the treatment of the acute cold with suppurative sinusitis, general care is important. The child should be put to bed with plenty of fresh air and a proper diet. Steam inhalations, hot moist packs to the area covering the sinuses, and the instillation of ephedrine sulphate for shrinkage, help to make the child more comfortable. Where drainage from the nose is profuse, in the acute stage, shrinkage of the nose with ephedrine solution followed in about ten minutes with suction introduced along the floor of the nose with a small rubber catheter as often as every two hours, effectively cleans out the nose. Where a copious discharge from the nose persists, after the acute condition has subsided, I have found the displacement method of irrigation as advocated by Proetz(4) very effective. A sinus infection is often kept up by retention in the cavity of the products of infection. Removal of the irritating exudate often results in reduction of the pathological process. Briefly, displacement irrigation consists in filling the nose with a therapeutic fluid, preferably ¼% ephedrine in normal saline, and then subjecting it to repeated negative pressure. The patient remains in a supine position with the head back. Air bubbles out of the sinus, or discharge if present, and the liquid runs in to replace the partial vacuum created. The ephedrine solution causes shrinking of the sinus mucosa and renders the ostia more patent. This method is readily applicable to children and its chief use is in subacute and chronic sinus infection with copiously and persistently discharging noses, and worthy of trial before endo-nasal puncture.

Case Reports—The following cases are cited as examples of latent and manifest sinusitis in children, requiring surgical drainage.

Case 1. L. A., 13 years, admitted March 10, 1934, for the removal of tonsils and adenoids. On admission, she had a sore throat and a temperature of 101°. She had been a chronic invalid for one year during which time she had pneumonia (?) on three occasions, pyelitis, chorea, frequent colds and sore throats, chronic cough with expectoration, persistent fever, and tachycardia. She was nervous and weak, and had lost considerable weight. No progress was made with bed rest and salicylates. The tuberculin test was negative. Examination revealed large infected tonsils, adenoids, postnasal discharge, and pus from both middle meatuses. Roentgenograms showed marked blurring of both maxillary sinuses. Roentgenograms of the chest showed peribronchial thickening, right and left. After two weeks in the hospital and normal temperature for a few days, the tonsils and adenoids were removed under general anesthesia and endonasal puncture of each maxillary sinus was done. 10 cc. of thick pus was aspirated from each sinus. She left the hospital in one week markedly improved. One month later, she was free from fever, gaining weight, no cough, and up and around.

COMMENT

Infection about the upper respiratory tract is often associated with pulmonary conditions such as chronic bronchitis, bronchiectasis, and the so-called "sinus lung," and nasal treatment often results in progressive and marked improvement. In most cases of pulmonary complications of this sort, the tonsils and adenoids already have been removed. I am confident that this child would not have shown the desired improvement by the removal of tonsils and adenoids alone.

Case 2. B. M. C., 10 years, admitted August 8, 1934, because of headache, fever, pain in the left eye, and swelling of the eyelids, left, of one week's duration. She had an acute upper respiratory infection with pus in each side of the nose. The left side of the face was swollen. Roentgenograms showed blurring of the left frontal, ethmoidal, and maxillary sinuses. A diagnosis of pansinusitis with left orbital cellulitis was made. Conservative treatment, consisting of nasal shrinkage and suction, was instituted, following which the pain became less but the swelling remained about the same. On August 11th, an external operation on the left frontal and ethmoidal sinuses was performed. About one ounce of pus under pressure was released immediately on making the incision. A large dehiscence through the lacrymal bone, the lamina papyracea, and the roof of the maxillary sinus, and considerable granulation tissue and sequestra bathed in pus, were found. On endonasal puncture of the maxillary sinus, thick creamy pus was aspirated. An intranasal window was made in the inferior meatus, and the naso-frontal opening was enlarged. Staphylococcus aureus was obtained on culture. Microscopic section of the tissue removed at operation showed an acute inflammation with bone necrosis. The child showed progressive improvement following the operation, and was discharged one month later with a small healed scar in the left fronto-ethmoidal area. Fig. 1.

Case 3. J. H., 9 years, admitted November 4, 1935, because of swelling of the left frontal and maxillary regions, the left eyelids swollen shut, and sinus tenderness of three weeks duration, following a head cold. The left side of the nose was markedly obstructed and following shrinkage, mucopus appeared in the middle meatus. Roentgenograms showed marked blurring of the left maxillary and ethmoidal sinuses. A diagnosis of left pansinusitis with orbital cellulitis was made. Conservative treatment, consisting of nasal shrinkage and suction, was instituted for a few days without improvement. External operation on the left frontal and ethmoidal sinuses revealed a large frontal sinus with considerable bone necrosis but no free pus present. Several sequestra were present. On endonasal puncture of the left maxillary sinus, 10 cc. of thick pus was aspirated. An intranasal opening was made in the inferior meatus and the naso-frontal opening enlarged. The child left the hospital 23 days later with a small healed scar, normal vision, and normal lid movements. Fig. 2.

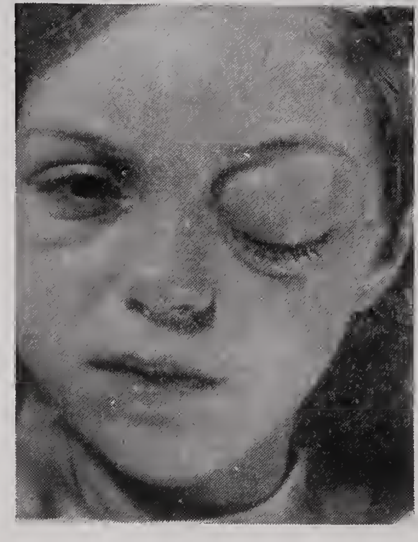

Fig. 1 (Case 2). Orbital cellulitis, left, secondary to suppuration of the adjacent paranasal sinuses.

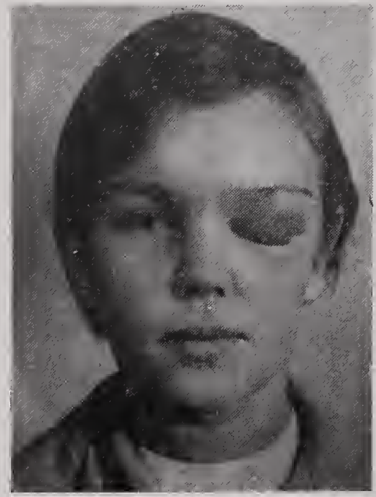

Fig. 2 (Case 3). Orbital cellulitis, left, due to acute suppurative sinus disease.

COMMENT ON CASES 2 AND 3

Orbital cellulitis is an inflammatory involvement of the soft tissues of the orbit. The great majority suggest an infective origin, and usually from the adjacent accessory nasal sinuses. Often the orbital inflammation subsides with conservative treatment to the nose. Occasionally, intranasal or external drainage is necessary.

Case 4. A. K., 14 years, admitted August 17, 1934, because of bilateral nasal blockage with offensive discharge from each side of the nose, of three years' duration. Nasal polyps bathed in mucopus were found obstructing both nasal fossae. Roentgenograms revealed extensive irregular thickening of the mucosa of both maxillary sinuses, obliterating about three-quarters of the lumen. On August 25, 1934, bilateral complete maxillary sinus operations were done under Avertin-ether anesthesia. Foul-smelling mucopus and thick, hyperplastic membrane was removed from both antra. Microscopic section of tissue removed showed severe inflammation of the sinus mucosa. When the patient left the hospital two weeks later, the nose showed marked improvement.

COMMENT

In the presence of nasal polyps, allergy always must be ruled out. Occasionally, nasal polyps accompany sinus suppuration as revealed in the above case.

Case 5. D. O., 13 years, admitted August 14, 1934, because of severe frontal headache of three weeks duration. On July 24, 1934, two days after swimming, the patient complained of severe right frontal headache and pain in the right eye. The right eye was swollen for about one week, but the swelling gradually receded. Summary of findings: The symptoms were those of an infectious invasion of the meninges. The meningeal infection subsided under spinal drainage, but the illness continued with left supra-orbital pain and tenderness, a cloudy left frontal sinus on x-ray, slow pulse, leukocytosis, right face and arm motor weakness, and bilateral papilledema. The spinal fluid was under normal pressure, and the spinal fluid cell count was 12 per c.mm. A diagnosis of left frontal lobe abscess, secondary to left frontal sinus suppuration, was made. On August 24, 1934, a trephine of the upper margin of the left frontal sinus was made by Dr. J. J. Keegan, and the sinus was found filled with pus. Granulations were present, especially on the posterior sinus wall, which was roughened and perforated (1 cm. in diameter). Pus from the frontal lobe abscess presented on insertion of a trocar. About one ounce of pus was aspirated, and staphylococcus aureus obtained on culture. Microscopic section of bone showed osteitis of the frontal bone. On October 5, 1934, the external wound was still draining. Small sequestra were noted in the drainage. Under local anesthesia, the nasofrontal duct was enlarged intranasally following which the external wound promptly closed. Eleven days later the tonsils and adenoids were removed. Two weeks later the patient was dismissed symptom-free. He was readmitted on November 26, 1937, because of epileptic attacks occurring during the past year and becoming more frequent. On December 15th, an operation was performed to separate subdural alhesions in the left frontal region. He was discharged two weeks later much improved.

COMMENT

This case is an example of frontal lobe abscess secondary to frontal sinus suppuration and is the type seen at autopsy if unrecognized. The diagnosis of frontal sinus involvement in this case was made primarily from the roentgenograms. Prognosis must be guarded regarding ultimate cure. This patient was readmitted three years following the first admission because of epileptic seizures for which a second operation was performed to separate subdural adhesions, and discharged improved.

SUMMARY

1. Most cases of acute sinusitis clear up by the most simple local nose and throat treatment with general hygienic care and diet.

2. A large percentage of cases of chronic sinusitis in children clear up with the removal of the tonsils and adenoids.

3. If removal of the tonsils and adenoids does not produce the desired result, a search should be made for a focus in the upper respiratory tract, particularly for paranasal sinus disease of the more or less latent type.

4. Severe sinus inflammation does occur and requires some type of surgical drainage varying with the particular case.

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Major and Minor Surgery

In two recent communications, Hubert A. Royster makes a plea that the term "minor surgery" be eliminated from our nomenclature because of possible implications. He advances the argument that the labeling of certain procedures as minor may mislead an intern or a general practitioner into believing that any condition requiring surgical intervention can be regarded as minor. Only one of 104 surgeons whom he consulted believed the division of surgery into major or minor is justified. The principal objection to the term, it appears, is that it is vague and ill defined. There exist no definite criteria by which to designate any one procedure as minor or major. What appears to be a simple procedure may develop into the most complicated one. What is a minor operation in the hands of a skilful surgeon may prove a major one in the hands of the unskilled surgeon. Such criteria as time required to perform an operation, the mortality, the skill required, the question of anesthesia, the question of whether it can be performed in the office or requires hospitalization are all variables. The suggested substitutes for the term minor surgery, such as office surgery, ambulant surgery or dispensary surgery, are hardly an improvement. Royster argues that all surgery is based on the same fundamental principles and is therefore not divisible. In no other field of medicine does a similar division into major and minor procedures exist. Actually the term minor surgery has largely disappeared from the curriculums of our leading medical schools.—*Jour. A. M. A.*, Aug. 13, 1938.

A Study of 836 Cases of Gallbladder Disease—The Results of Medical and Surgical Treatment*

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There have been reported several excellent statistical analyses of large series of cases of extra-hepatic biliary disease. Since most of these studies have been concerned primarily with limited phases of the problem it seemed desirable to correlate the various phases in an inclusive study of a single series of cases. To this end the following report is submitted.

Studied were 836 patients treated at the University Hospital for extra-hepatic biliary disease during the period from July, 1925 to July, 1936. Data were obtained from the hospital records of these cases and from follow-up reports from all traceable cases, the latter comprising 434 or slightly more than half of the series. The follow-up reports were obtained from both patients and their personal physicians and represent evaluations of the results of treatment from 1 to 12 years after dismissal from the hospital. The composite data are tabulated in tables I, II, III, IV, and V.

1. Age. The average age for all cases was 46.3 years, the youngest 9 and oldest 80. There were twenty cases or 2.3% of the series under 20 years of age and 148 or 18% under 30. In both groups the ratio of females to males was 5 to 1. The average age in the twenty-two cases with malignant disease (ten carcinomas of the gallbladder and ducts and twelve of the pancreas) was 58.6 years, fifteen years older than the non-malignant group.

TABLE I. 836 CASES OF EXTRA-HEPATIC BILIARY DISEASE
570 Operated Cases for Diseases of the Gallbladder and Ducts,
Classified According to Diagnosis of Pathologist

	Ch. Cholecyst. 458 cases		Cholesterosis 36 cases							
	354 with stones	104 without stones	11 with stones	25 without stones	Normal G. B. 42 cases	Acute Cholecyst 10 cases	Carcinoma G. B. & ducts 10 cases	Carcinoma of the pancreas 12 cases	266 Non-operated Total unclassified	Operated and Non-operated 836 Totaled
Average age ______	44.1	40.0	35	42	41.4	44.7	57.4	59.5	44.7	46.3
Females __________	311	69	11	21	30	7	8	4	189	651
	88%	66%	100%	84%	71.4%	70%	80%	33.3%	71%	77.8%
Males ____________	43	35	0	4	12	3	2	8	77	185
	12%	33%	0	16%	28.6%	30%	20%	66.6%	29%	22.2%
Obesity __________	199	28	6	16	12	6	2	2	112	381
	56%	27%	55%	64%	28.6%	60%	20%	16.6%	42%	48%
Severe colic ______	312	42	11	8	17	7	6	4	112	519
	90%	40%	100%	32%	40.4%	70%	60%	33.3%	42%	62%
Dull pain ________	136	80	4	21	36	6	7	8	186	484
	38%	77%	36%	84%	85.7%	60%	70%	66.6%	70%	58%
Dyspepsia and	334	101	11	22	28	8	10	8	234	748
Biliousness _______	94%	98%	100%	88%	67%	80%	100%	66.6%	88%	89.4%
Food	218	63	7	16	20	5	3	5	128	457
Intolerance _______	61.5%	60.5%	63.5%	64%	47.6%	50%	30%	41.6%	48%	54.8%
History	28	9	0	3	2	3	0		19	64
of fever __________	8%	8.5%	0	12%	4.8%	30%	0		7%	7.5%
Fever and	36	6	0	0	3	0	0	2	17	64
Chills ____________	10%	5%	0	0	7.1%	0	0	16.6%	6.7%	7.5%
History of	178	47	5	7	17	0	8	12	87	361
Jaundice _________	50%	45%	45.5%	28%	40.4%	0	80%	100%	32.7%	43%
Jaundice in	80	11	1	0	2	1	8	12	35	150
Hospital _________	22%	10.5%	9%	0	4.8%	10%	80%	100%	13.2%	18%
History of	95	21	3	1	12	0	5	12	45	182
Clay stools _______	27%	20%	27%	4%	28.6%	0	50%	100%	17%	21.7%
Constipation ______	190	57	8	9	26	2	1	8	137	430
	53%	52%	72.7%	36%	62%	20%	10%	66.6%	51.5%	51.4%
Diarrhea _________	15	5	0	1	1	0	0		20	42
	4%	5%	0	4%	2.4%	0	0		7.5%	5%
Tenderness	315	93	11	24	34	8	8	10	173	666
R. U. Q. _________	90%	89.5%	100%	96%	81%	80%	80%	83.3%	65%	80%
Palpable mass	16	5	1	0	1	2	4	6	6	41
or G. B. __________	4%	5%	9%	0	2.4%	20%	40%	50%	2.2%	5%

2. Sex. In the entire series there were 3.5 females to 1 male. In the stone group the ratio was 7 females to 1 male and in the cholesterosis group 8 females to 1 male. But of the non-calculus gallbladders, the females predominated only 2 to 1 and in the series of carcinoma of the pancreas this ratio was reversed. The sex divergence

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*Read before the Annual Assembly of The Nebraska State Medical Association in Lincoln, April 26, 1938.

TABLE II. CORRELATION OF CHOLECYSTOGRAPHY
With Pathologic Diagnoses in 419 Operated Cases

X-ray Report	Total	Pathologic Report Chr. Cholecystitis with stone	no stone	Cholesterosis with stone	no stone	Normal Gall-bladder	Acute Cholecystitis stone	Carcinoma of Gall-bladder	Pancreas	Diagnostic Errors
Non-visualization No stone seen	153 36.7%	110 73.8%	25	3		6 4.1%	3	5 (3 stone)	1	6 normal gallbladders 4.0%
Non-visualization with opaque stone	28 6.6%	26 93%	1					1		2 with no stone 7%
Impaired concn. with stone	80 19.0%	70 91.2%	2	3	1	4				4 normal gallbladders 3 stoneless 8.8%
Normal concn. with stone	4 0.9%	4 100%								none
Imp. concn. normal emptying no stone	125 30%	35 31.2%	48	4	20	17 14.4%			1	17 normal gallbladders 14.4%
Normal function (Normal concn. and emptying)	18 4.2%	1	8		2	7 39%				11 pathologic gallbladders 61%
Flat plate with stone visualized	11 2.6%	9 91%	1 9%				1			1 stoneless gallbladder 9%

1. 80% non-visualized gallbladders contained stones (145 of 181).
2. 42% of stones were visualized. (114 of the 272 cases).
3. 8% error in X-ray diagnosis of stone (10 of 123 unconfirmed).
4. 9.5% gross error in X-ray diagnoses.
   (a). Of 18 radiographically normal gallbladders 11 or 61% were pathologic.
   (b). 27 histologically normal gallbladders showed X-ray evidence of dysfunction.
5. 87.5% non-visualized in biliary tract carcinomas (7 of 8).

TABLE III. X-RAY DIAGNOSIS VERSUS FOLLOW-UP RECORDS
IN 227 OPERATED CASES

Subdivided As to Pathologic Diagnosis

Cholecystographic Classification	Results in Entire Series W	I	U	Ch. Cholecyst. With Stone W	I	U	Ch. Cholecyst. Stoneless W	I	U	Normal Gallbladders W	I	U
1. Stone seen in flat plate	3 75%	1 25%	0	3	1	0	0	0	0	0	0	0
2. Impaired concn. with stone	53 78%	13 19%	2 3%	46 78%	13 21%	3 2%	0	0	0	0	0	0
3. Normal concn. with stone	1 50%	1 50%	0	1 50%	1 50%	0	0	0	0	0	0	0
4. Impaired concn. ? stone	4 57%	2 28%	1 15%	0	0	0	0	0	0	1	0	0
5. Normal concn. ? stone	0	0	0	0	0	0	0	0	0	0	0	0
6. Non-visualized	50 75%	13 19%	5 6%	44 73%	13 22%	3 5%	6 77%	3 33%	0	0	0	1
Summary of above groups	74%	20%	6%	73%	22%	5%						
7. Impaired concn. only	23 70%	8 19%	6 11%	8 80%	1 10%	1 10%	12 57%	7 33%	2 10%	3 50%	0	3 50%
8. Impaired concn. and emptying	13 70%	4 21%	2 9%	4 80%	1 20%	0	6 60%	2 20%	2 20%	0	0	0
9. As in (8) plus irreg. contour	3 50%	1 16%	2 34%	2 100%	0	0	1 100%	0	0	0	0	0
10. Impaired emptying alone	1 33%	1 33%	1 33%	0	0	0	1 33%	1 33%	1 33%	0	0	0
11. Irregular contour alone	1 50%	1 50%	0	0	0	0	1 50%	1 50%	0	0	0	0
12. Normal function	9 82%	2 12%	0	1 100%	0	0	5 71%	2 29%	0	1 100%	0	0
Grand Total	70%	20%	10%	74%	20%	6%	60%	30%	10%	55%		45%

Note*—Not included are the cases of cholesterosis and acute cholecystitis.
W—Well I—Improved U—Unimproved

in relation to stones and particularly to cholesterosis suggests a chemical rather than inflammatory basis for much of gallbladder disease. It particularly suggests disturbed cholesterol metabolism.

3. Nutrition. In regard to nutrition it is likely that the case records were not entirely accurate. They showed that only 48% of cases in the entire series were obese and that 56% of cases with stones were fat as compared to 27% in the stoneless group. The cholesterosis series led the field in highest percentage of cases with obesity, 61.1%, as it did in respect to the female sex.

4. Pain. Ninety-one percent of cases with stones gave a history of severe pain or colic

whereas only 36% of the stoneless cases had experienced severe pain. It is interesting that 40% of cases with histologically normal gallbladders had had colic, as also had 33% of the cases of carcinoma of the head of the pancreas. It is probable that colic in the normal gallbladders had resulted from dyskinesia, to be discussed later. Colic in association with malignant obstruction of the ducts indicates the fallacy of relying upon the rule of painless jaundice in differential diagnosis.

5. Dull pain and dyspepsia. Under this heading has been grouped the variously described symptoms of pain and distress from gas, pressure, vomiting, belching, a lump and sour stomach. 58% of the entire series gave a history of dull pain, 90% a history of dyspepsia. It is probable that careful questioning would have increased this figure nearly to 100%.

6. Selective food intolerance. A history of intolerance of fats, leafy vegetables, beans, apples, etc., was obtained in 55% of the entire series, and in 60% to 64% of cases with pathologic gallbladders but in only 48% of those with normal gallbladders. There was no significant variation in the stone and stoneless groups.

7. Fever and chills. Only 7.5% of the cases gave histories of fever or chills and only 15% of the calculus group had experienced them. As would be anticipated these syymptoms were reported in 30% of the cases with acute cholecystitis and in 62% of forty-one cases with common duct stones.

8. Jaundice. 43% of cases in the series gave histories of jaundice and 18% were jaundiced on admission or during their stays in the hospital. From the histories, jaundice was reported with almost the same frequency in the calculus and non-calculus groups but jaundice was observed in the hospital in 21% of the stone cases as compared to 10.5% of the stoneless cases. 80% of cases with carcinoma of the gallbladder and 100% of those with carcinoma of the pancreas were jaundiced. Difficult to understand however, is the record of jaundice in the hospital in one of the group of normal gallbladders. 40.5% of this same group of normals gave histories of jaundice but this is understandable in as much as laymen do not distinguish true jaundice from palor and the pasty appearance associated with biliousness and other indispositions and their statements of personal observations of jaundice are notoriously inaccurate.

9. Constipation. This symptom was reported in 51.5% of the cases. In the majority of cases it was obstinate and troublesome. There was no noteworthy difference in the various groups of cases except for the high incidence of 62% in cases with normal gallbladders. Diarrhea was uncommon, occurring in approximately 5% of cases.

10. Tenderness in the right hypochondrium. This was elicited in 80% of cases of the entire series, in from 90% to 100% of cases with pathologic gallbladders and in 81% of the normal gallbladders.

11. Palpable gallbladder or tumor. The gallbladder was palpable in 5% of cases of the entire series and in 20% of those with acute lesions. A tumor was palpable in 40% of cases with carcinoma of the gallbladder and in 50% of those with carcinoma of the head of the pancreas.

12. Blood. The blood pictures were essentially normal except in the group of acute gallbladders. Of the ten acute cases, nine showed leucocytosis varying from 10,000 to 24,500 with an average count of 16,000.

EVALUATION OF CHOLECYSTOGRAPHY

Four hundred and nineteen of the 570 cases operated had had roentgenologic studies, eleven by flat plates only and the remainder by cholecystography with the dye administered orally in most instances.

To evaluate the accuracy of these radiographic interpretations, they were compared with the reports of findings as demonstrated at operation and interpreted by the pathologists. The results of this analysis are shown in table II.

Forty-three percent of the gallbladders were non-visualized and although 80% of these non-visualized gallbladders were found at operation to contain stones, in only 15.5% of them were the stones sufficiently radiopaque to be evident radiographically. It should be noted also that opaque calculi were visualized in flat plates in ten cases in whom no subsequent attempt was made to visualize the gallbladder with dye.

In all, 272 cases were found to have stones, but in only 114 or 42% were the stones demonstrated roentgenographically. These included both opaque and non-opaque calculi. In ten cases shadows were misinterpreted as stone in as much as the diagnosis of stones was unconfirmed at operation. This represents a diagnostic error of 8.1%. In only four of these cases however was there gross or total diagnostic error, that is, failure to find sufficient pathologic changes in the gallbladder to explain the radiographic evidence of dysfunction.

From a pathologic point of view the gross diagnostic errors for the entire series of cases totalled forty-five or 9.5%. These consisted of eleven pathologic gallbladders which were interpreted as normal radiographically, and of twenty-seven histologically normal gallbladders which gave roentgenographic evidence of dysfunction. It must be remembered however, that the Graham-Cole test registers evidence of pathology, only in so far as the pathologic condition alters the function of the gallbladder. Therefore as a test of function primarily it is unjust to discredit the test in the above forty-five cases on the basis of failure of pathologic confirmation. It will be shown subsequently that in the group of histologically normal gallbladders, relief of symptoms from cholecystectomy was much greater in the cases with radiographic evidence of dysfunction than in those with negative cholecystographic findings. From much recently accumulated evidence it appears that dysfunction alone and in the absence of pathologic changes in the gallbladder can give rise to gallbladder symptoms including colic; also that dysfunction may be a forerunner and the cause of subsequent pathologic changes in many cases.

TABLE IV. RESULTS OF SURGERY IN 287 CASES

I. Cholecystitis with stones		I. Cholecystitis no stones	
1. Consider themselves well	78%	1.	60%
(a) Residual dyspepsia	23%	(a)	12.8%
(b) Entirely asymptomatic	55%	(b)	47.2%
2. Considered improved	18%	2.	27%
3. Well or improved	96%	3.	87%
4. Unimproved (only) (half of unimproved subsequently relieved by removal of C. D. stones)	4%	4.	13%
II. Cholesterosis with lithiasis		II. Cholesterosis no stones	
1. Considered well	85.7%	1.	50%
(a) Residual dyspepsia	0	(a)	19%
(b) Assymptomatic	85.7%	(b)	31%
2. Considered improved	14.3%	2.	37.5%
3. Well or improved	100.0%	3.	87.5%
4. Unimproved	0	4.	12.5%
III. Normal gallbladder			
1. Entirely well	54%		
2. Improved	23%		
3. Well or improved	77%		
4. Unimproved	23%		

There was non-visualization of the gallbladder in all cases with complete biliary obstruction which were studied and in all but one of eight studied cases with carcinoma of the biliary tract including six cases of carcinoma of the gallbladder and one of the head of the pancreas.

In an effort to evaluate in operated cases, the prognostic value of cholecystography, a comparative study was made of the X-ray findings and of post-operative follow-up reports in 227 cases. These results as tabulated in table III show with the exception of one group of cases that the greater and the more definite the radiographic evidence of disease of the gallbladder the greater the likelihood of cure from removal of the gallbladder. The excepted group, the cases with radiographically normal gallbladders presented the highest percentage of cures of the entire series.

In justice to cholecystography it should be stated that the above series contains many cases which were studied before the technic of cholecystography and the interpretation of cholecystograms had evolved to its present state of greater accuracy. This fact is brought out by a comparison of the findings in this series of cases with the series reported by Doctor Howard Hunt in this Journal in 1936. Both series contain many of the same cases but since Doctor Hunt was concerned only with the problem of cholecystography his series excluded the early cases reported here.

Additional evidence of the greater accuracy of cholecystography in recent cases is shown in the analysis of 118 cases studied and operated at the University Hospital during the two year period from July, 1936 to July, 1938. In this series there was not a single error in the positive interpretation of the presence of stones. All radiographic diagnoses of stones were confirmed at operation. In six cases there was failure to demonstrate abnormal histologic changes in the gallbladder to account for the radiographic evidence of disfunction. Thus there was a possible though improbable error of five per cent.

RESULTS OF TREATMENT

Of the total series of 814 cases of benign lesions of the extra-hepatic biliary system 548 received operative treatment and 266 non-operative dietary and medicinal therapy.

Constituting the non-operated group were 133 cases with insufficient distress to warrant operation, thirty-nine cases who were poor surgical risks, twenty-eight who refused operation and twenty-four in whom the diagnosis was uncertain.

In the operated group there was a primary operative mortality of 5.4% (31 cases). The causes of death were as follows: Peritonitis, 13; pneumonia, 6; pulmonary embolism, 3; congestive heart failure, 3; shock, 2; hemorrhagic infarction of brain and lungs, 1; intraperitoneal hemorrhage, 1, and unestablished, 2.

Twenty-six cases were treated by cholecystotomy and follow-up reports were obtained from eleven of them. Five or 45% were well, four improved and two were unimproved and made well only after subsequent cholecystectomy. These figures are interesting in view of the prevailing opinion that simple drainage is a poor compromise for cholecystectomy. Two cases had remained well for more than ten years.

TABLE V. RESULTS OF OPERATIVE AND NON-OPERATIVE TREATMENT

Results of Cholecystectomy in 287 Cases

Classification	Well			Improved					Unimproved					
I. Chronic Cholecystitis	Total	No Symptoms	Residual Dyspepsia	Total	Dull Pain Only	Dull Pain Dyspepsia	Dyspepsia Only	Lesser Colic	Total	Unchanged	Worse	Jaundice	Chills	Subsequent 1. Diagnosis 2. Operation
1. Stone with colic 168	132	93	39	29	1	23	4	1	7	7		4	5	2. 3 C.D.S. *
%—	79.6		23	17.4					30					1 Gastric Ulcer
2. Stone dyspepsia no colic 25	19	12	7	6		4	2		1		1	1	1	
%—	73		28	23					4					2. 1 C.D.S. *
3. No Stone with colic 24	17	15	2	5	1	2	2		2		2	1	2	1. 1 C.D.S. *
%—	63		8.3	18.5					8.3					2. 1 C.D.S. *
4. No Stone-dyspepsia no	16	11	5	10		1	9		5	5				1. Allergy
colic 31 %—	51.5		16	37					18.5					Duodenal Ulcer
Total 248 %—	74		21	20					6					
II. Cholesterosis														
1. Stone with colic 7	6	6		1	1									
%—	85.7			14.3										
2. No colic-stone														
3. No stone with colic 4	3	2	1	1		1								
%—	75		25	25										
4. No stone dyspepsia	5	3	2	5		3	2		2	1	1			
no colic 12 %—	42			42					16					
Total 23 %—	60		13	30					9					
III. Normal Gallbladder														
1. Colic 5	3			2		1	1							
%—	60			40										
2. Dyspepsia no colic 8	4			1					3	2	1			1. Duodenal ul.
%—	50			12.5					37.5					2. Same
Total 13 %—	54			23					23					
IV. Acute Cholecystitis 5	5	2	3											
%—	100													

RESULTS OF NON-OPERATIVE MEDICAL MANAGEMENT IN 89 CASES

Classification	Well Total	No Symptoms	Residual Dyspepsia	Improved Total	Dull Pain Only	Dull Pain Dyspepsia	Dyspepsia Only	Lesser Colic	Unimproved Total	Unchanged	Worse	Jaundice	Chills	Subsequent
I. Stone by X-ray														
1. With colic 9	3	2	1	3	1	1		1	3	1	1			2. 1 Cholecystectomy
%—	33.3			33.3					33.3					
2. Dyspepsia no colic 10				1		1			9	5	4			2. 2 Cholecystectomies
%—				10					90					1. One Nephrectomy
II. Ch. Cholecystitis														
No stones demonstrated	6	5	1	10	1	9			8	4	4			2. Cholecystectomy
1. Colic 24 %—	24			40					36					
2. Dyspepsia no colic 43	8	7	1	14		6	8		21	9	12	2		1. 2-G.I. Ca * 2. P. Ulcer 1. Psychosis 2. 1 appendectomy and 1 nephrectomy
%—	18.6			32.5					48.9					
Total %—	20		18	32.5					47.6					
III. Acute Cholecystitis 3	1		1	2		2								
%—	33.3			66.6										

* Common Duct Stones
* Gastric Carcinoma

Follow-up reports were obtained from 287 cases treated by cholecystectomy with and without choledochotomy. These cases have been classified in respect to (1) pathologic findings at operation, (table IV) and, (2) the symptoms of colic and dyspepsia, (table V). The results in the cases with gallbladders containing stones were very good and were considerably better than those in the group with stoneless gallbladders. In the former group 78% considered themselves well and 96% were well or improved as compared to 60% and 87% in the latter group. It should be noted in both of these groups that although 78% and 60% consider themselves well, 23% and 12.8% had residual symptoms of dyspepsia, leaving only 55% and 47.2% entirely asymptomatic. The highest percentage of cures occurred in the cases of cholesterosis with stones and the lowest in those with histologically normal gallbladders. However, the number of cases with normal gallbladders which were relieved of symptoms was surprisingly large, 54% were well and 77% were well or improved. The mechanism of symptoms and of the relief of symptoms by cholecystectomy in the so-called normal group may have been of various types. It is possible that dysfunction or biliary dyskinesia was a responsible factor. Also, possible are purely psychic functional influences and the influences of simultaneous removal of the appendix, which, incidentally, was done in most of the cases.

A comparison of the results of cholecystectomy in the same group of 287 cases, classified in respect to the symptoms of dyspepsia and colic, showed that the percentage of both cures and improvements were much higher in the colic than in the non-colic dyspeptic cases. This was true of all groups including cholesterosis and normal gallbladders. The difference, however, was much greater in the stoneless cases. Thus the degree and the likelihood of symptomatic relief by cholecystectomy is more dependent upon the presence of stones or a history of colic than upon the pathologic condition of the gallbladder.

Reports from eighty-nine cases treated by non-operative medical management show relief of symptoms in only 20% of cases and total asymptomatic relief in only 2%. Nearly half of the entire group were unimproved.

It should be noted that in both the operated and non-operated groups a large number of cases who considered themselves well had continued to have some dyspepsia.

MISCELLANEOUS DATA

For the lack of space this data will be listed briefly in outline form.

1. In three cases there were spontaneous fistulae between the biliary tract and the stomach or duodenum. In one case the gallbladder communicated with the stomach and in two there was a fistula between the common duct and duodenum. In all three cases the fistulae were unrecognized before operation.

2. In forty-one of the jaundiced cases or 7.5% of the 548 operated cases, stones were removed from the common or hepatic ducts. Follow-up reports showed that subsequent to cholecystectomy, six additional cases were reoperated for removal of common duct stones. All of the forty-one cases gave histories of colic, and jaundice and twenty-five gave histories of chills and fever. There was an operative mortality of 10% in this group.

3. In ten cases a diagnosis of carcinoma of the gallbladder had been made. The diagnosis in five cases was made solely from clinical impressions of the gross findings at operation and are therefore open to question. Positive diagnoses of adeno-carcinoma of the gallbladder were made in five cases, four from tissues removed at operation and one from autopsy examination. The youngest case was thirty-eight, the oldest seventy-one. All of the cases died within six months following exploration.

4. Of the 287 operated cases with follow-up records, eleven or 4% had developed incisional hernias and eleven had biliary fistulae which persisted constantly or intermittently for periods of six months to two years. Four cases were subsequently found to have peptic ulcers.

CONCLUSION

It is apparent from the above data that:

1. Gallbladder disease is not as predominantly a malady of middle age as is generally believed. 2.3% of cases were under 20 years of age and 18% were under 30.

2. Severe pain and colic are generally associated with stones, yet 36% of cases with stoneless gallbladders and 40% with normal gallbladders had colic.

3. Dyspeptic symptoms are almost constant accompaniments of gallbladder disease. Chills and fever are unusual.

4. Cholecystography should be considered merely as an aid in diagnosis and as a valuable adjunct to other radiographic and laboratory studies used in differential diagnosis. It should therefore always occupy a place of secondary importance to the clinical impressions gained from the history and physical findings. Although cholecystography depicts with a high degree of accuracy, the functional condition of the gallbladder and to a much lesser degree its pathologic state, it gives little or no direct information as regards the relation of this evidence to the symptoms of which the patient complains and of the likelihood of relief from medical or operative treatment. That cholecystitits and cholelithiasis exist frequently as relatively silent lesions has been pointed out by the frequent incidental finding of these lesions at autopsy and in the course of routine exploration through laporatomy wounds.

The case analyses showed that 80% of non-visualized gallbladders contained stones and that stones were visualized in only 42% of the cases which had stones.

5. In general the results of operative treatment were only fair. The failure to bring about com-

plete relief of symptoms in the majority of cases and even partial relief in a small minority indicates the need of much improvement in diagnosis, selection of cases or methods of treatment. The best results were obtained in two groups of cases; (1) cholecystitis with lithiasis and (2) cases of colic. Although 97% of cases in these two groups were well or improved, one fourth of them still had residual symptoms of dyspepsia. The percentage of cures and improvements in cases with colic were practically the same regardless of the condition of the gallbladder whether pathologic with or without stones or normal.

Thus, colic with or without stones is a most important symptom because it is the least well tolerated of all symptoms and the one most likely relieved by operation.

In the non-calculus, non-colic groups there were a large number of operative failures.

The general dissatisfaction with the results of gallbladder surgery has stimulated much critical investigation in recent years. Many of the causes of failures are obvious and well understood. Among these are stones overlooked at operation and left in the ducts, residual inspissated bile and blood clots in the ducts, stenosis of the ducts, adhesions which distort or obstruct the duodenum, ileum or colon, fistulae, incisional herniae, obvious misdiagnoses, residual liver damage and pancreatitis and uncorrected anxiety and other psychic states.

Judd and Graham have shown that varying degrees of hepatitis and pancreatitis frequently accompany gallbladder disease and to the changes in these organs, they were inclined to attribute some of the residual symptoms. This contention has been seriously questioned by recent observations of Mann and Bollman. They have demonstrated that the liver in experimental animals has tremendous regenerative and restorative propensity.

Undoubtedly residual cholenagitis and persistence of excessive dilatation of the ducts, particularly of the intra-hepatic ducts, (choleangiectases) are responsible for symptoms in some cases.

Enjoying much attention in recent years is the concept of dysfunction or dyskinesia. From studies of intraductal pressure, Westphal, Ivy, Mann, Walters and others have presented evidence that distress, pain, vomiting, etc., may result from functional inbalance of the mechanism which is regulated by the gallbladder the sphincter of Oddi and secretory pressure of the liver and which controls the pressure and the flow of bile from the gallbladder and ducts. Thus dyskinesia may explain the occurence of symptoms in some of the forty-two cases of this series which had histologically normal gallbladders. Simularly it may account for residual symptoms in many of the cases which were unrelieved or only partially relieved following cholecystectomy.

Probably the commonest cause of complete failures of operative treatment are errors in diagnosis and in interpretation of clinical data. Since relatively asymptomatic gallbladder disease exists so commonly, the mere demonstration of roentgenographic evidence of an abnormal gallbladder should not terminate the examination of a patient and establish the diagnosis. The symptoms which the patient presents may be entirely unrelated to the abnormal gallbladder and treatment should not be undertaken until all other possible sources of symptoms have been excluded. This is well illustrated by the fact that 10 of the unrelieved operated cases in the above series of followed cases were found subsequently to have lesions unrelated to the biliary system which were responsible for the symptoms. Six had peptic ulcers, two surgical kidneys and two carcinomas of the stomach. In the non-colic and non-calculus cases, operative treatment should be resorted to only after a thorough trial of conservative medical management and after the patient has been informed of the operative risk and the possibility of failure to gain relief. Medical management should include trial therapy directed toward other possible sources for the symptoms.

6. Detailed discussion of specific features of the analysis of this series of cases such as jaundice and carcinoma will be reported in a subsequent publication.

DISCUSSION

DR. J. D. McCARTHY, (Omaha): Dr. Bisgard should be commended for his painstaking analytical study on gallbladder disease. Too frequently we have only our own few cases to fall back upon in formulating impressions and arriving at conclusions. A series of case reports as sizeable as Dr. Bisgard has discussed emphasizes the need for correct diagnosis and careful discrimination when contemplating surgery.

I would like to discuss that group of people with complaints which could be grouped under the heading Dyspepsia. These symptoms frequently suggest gallbladder disease, especially so if it is found on cholecystography that the shadow "shows decreased concentration and slow emptying time." Too many of these patients without further study are operated upon, the gallbladder removed, and seemingly during their convalescence show definite symptomatic improvement. Following this return to usual routine, however, there is a return in a goodly percentage of the original complaints, and it is not long before the patient is again making the rounds seeking relief. I shall limit my remarks to those presenting the foregoing picture.

In considering this group it seems to me that one of the following questions must be answered before deciding upon therapy:

(a) Is the gallbladder actually impaired, and if so, is it the cause of symptoms.

(b) Is the gallbladder actually impaired but are not the symptoms secondary to coincidental anatomical, pathological or physiological conditions elsewhere.

(c) Are the symptoms secondary to a combination of gallbladder disease and related or unrelated entities.

It is an established fact that cholecystitis may directly or indirectly cause symptoms referable to any part of the gastro-intestinal tract. It is also an established fact that abnormalities in any part of the gastro-intestinal tract may affect the function of a normal gallbladder or give rise to symptoms in what had previously been a symptomless, although moderately impaired, gallbladder.

If what has just been said is not continuously before us, the results in a series of treated so-called gallbladder disease are liable to be discouraging. It is not to be expected that the individual with an irritable colon giving rise to symptoms suggesting gallbladder disease is going to be benefited by a cholecystectomy, especially if the colon is not treated.

Time will not permit more than citing the results of a study made on twenty-eight patients in the Gastro-Intestinal Clinic of the University of Nebraska Medical School whose complaints were the same following cholecystectomy as they had been prior to surgery.

The following complaints made by these twenty-eight patients are listed in their order of frequency:

Cholecystectomy	28		
Symptoms Persisting	28		
Constipation	23	Bloat	7
Belching Increased	22	Gnawing	6
Epigastric Distress	17	Weighty Feeling	4
Increased Flatus	15	Vomiting (Occa. 1) (Induced 3)	4
Sense of Fullness After Eating	12	Pain	2
Nausea	10	Diarrhoea	1

All of these patients were carefully studied, a complete history, physical examination, necessary laboratory proceedures and X-ray being included.

Gastric analyses of these patients may be grouped as follows:

Gastric Analyses	28		
Low	12	High	3
Low Normal	6	Achlor.	2
Normal	5		

Radiographic diagnoses were as follows (only eleven of these patients stated that they had had an X-ray study of the gastro-intestinal tract prior to cholecystectomy), some of the patients having a combination of findings, all of which are listed.

Radiographic Studies	28		
Spastic Colon	14	Atonic Colon	4
Deformity Duod.	10	Pylorospasm	3
Ptosis - Colon	10	Diverticulitis	3
Redundancy (Marked)	7	Negative	3
Ptosis - Stomach	6	Duod. Stasis and Dilatation	1
Ulcer	4	Megacolon	1

The final diagnoses and results are as follows:

Diagnosis		Total	Well	Improved	Unimproved
SPASTIC COLON		15	8	3	4
Diverticulitis	2				
Dedundance	4				
Ptosis (S)	1				
Ptosis (C)	5				
Pylorospasm	2				
Deform. Duod.	3				
Duod. Ulcer	1				
"IRRITABLE COLON"		4	1	1	2
Redundancy	3				
Ptosis (S)	1				
Ptosis (C)	1				
Deform. Duod.	1				
ATONIC COLON		4	3	1	0
Ptosis (S)	4				
Ptosis (C)	4				
Deform. Duod.	3				
PEPTIC ULCER		4	1	2	1
Duod. Stasis-Dilat.	1				
Pylorospasm	1				
MEGACOLON		1		1	

It is not possible in such a short time to include other studies made on these patients. It is felt, however, that this abstracted survey re-emphasizes the fact already pointed out by others, that the diagnosis of cholecystitis without stone or history of colic seemingly necessitating cholecystectomy should not be made until all other possible causes for the dyspeptic group of symptoms have been ruled out.

The Surgical and Hormonal Treatment of Undescended Testicle*

J. E. COURTNEY, M. D., and J. W. DUNCAN, M. D.,

Omaha.

The early literature on undescended testicle revealed the fallibility of human judgments. John Hunter said in 1765, that the undescended testicle was a biological fault and that nothing could be done for it. A short time after that, Sir Astley Paston Cooper told a medical student with bilateral non descent that he was like a castrate and the young man promptly shot himself. Sir John Bland Sutton, only recently deceased, said several years ago, that all efforts to bring an undescended testicle into its proper position were "works of supererogation" and that such testicles had better not be disturbed. These gentlemen, whose names are familiar to physicians the world over, were all mistaken. Today we are discussing not the propriety but rather the choice of treatment of this condition.

Nearly all diseases have both surgical and medical aspects. To illustrate, almost without exception undescended testicle requires hormonal treatment preparatory to surgery, even though the latter is ultimately required, just as every case of diabetic gangrene requires thorough general medical examination with Insulin preparation as a complement to surgical treatment.

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*Abstract of presentation by lantern slides at Annual Assembly of The Nebraska State Medical Association in Lincoln, April 26 1938.

The fact that undescended testicle is quite common, that it has a general medical aspect as well as a surgical one, makes it a topic of general interest for presentation. Only the clinical aspects of the condition will be presented.

Undescended testicle occurs in one in 500 males. About 25% are bilateral. It is doubtful if heredity is a factor, though we now have identical twins five years old under observation, each of whom has an undescended testicle.

Various explanations of non descent are proved to be erroneous by the response to endocrine therapy. Very probably the most powerful single influence in normal descent is hormonal.

It is not, however, the only influence. Unilateral non descent, though both testes are exposed to the same hormonal influence, shows that other factors are involved.

There is probably mechanical obstruction to descent in some cases.

In cryptorchidism the function of internal secretion is not disturbed. The usual secondary sexual characteristics develop. Copulation is normal but usually there is aspermia with non fertility especially in bilateral cases.

Not more than 10% of cases of bilateral cryptorchidism are fertile and they remain fertile for a decade only. With unilateral non descent most males are fertile. Whether imperfect because of non descent, or whether non descent because of inherent imperfection, is a question.

If an undescended testicle is brought into the scrotum before puberity, either by hormone or surgery, normal spermatogenesis will develop.

Beyond doubt normal spermatogenesis depends upon the scrotal position of the testicle. The scrotum is a heat regulating structure Scrotal testicles placed in the abdomen soon show aspermia. Heat retaining dressings on the scrotum cause the same condition. This has been very clearly proven by Carl Moore of Chicago.

The testicles are migratory in infancy and childhood. All observing mothers and physicians have witnessed this. Descent usually does not take place after puberty, though some cases are reported.

Ninety percent of cases of undescended testicle are accompanied by a congenital hernia. One out of ten cases operated upon showed no hernia. The hernia is not influenced by hormonal treatment. Our experience has been that treatment is frequently sought for the associated hernia rather than for non descent which, per se, does not cause many symptoms.

Torsion of intra-abdominal testicle is not uncommon. This type of testicle may present problems in diagnosis, especially if it is on the right side.

Sometime ago a case of a young man suffering from acute gonorrhea, made it extremely difficult to diagnose between an epididymo-orchitis in the right intra-abdominal testis and acute appendicitis. Operation was not done and recovery occurred.

There may be other physical or mental handicaps associated with cryptorchidism. We have seen some associated mental retardation and bilateral flat footedness. Malignancy of the testicle is probably not more common in cryptorchids than in other males. Those cases reported have developed in testicles following surgical placement in the scrotum.

To assure fertility the testicles should be placed in the scrotum before puberty. There probably is no advantage in earlier treatment unless an associated hernia requires it.

Various surgical procedures have been described. Bevan's operation was probably the first described and generally employed in the U. S. At the hands of most surgeons it gives about 50% satisfactory results.

The skin and superficial fascia and the external oblique are divided exposing the testicle.

He divided and ligated transversely the hernial sac and the unclosed vaginal process high. He then stripped the remainder of this process off the cord down to the testicle. The scrotum is manually dilated, the testicle placed in it, and the subcutaneous abdominal ring made smaller with a purse string suture.

In 10% of the cases Bevan maintained it was necessary to divide the spermatic vessels. In a case seen where this technique was followed, gangrene of the testicle resulted.

In 1909 Franz Torek described a very satisfactory operation for undescended testicle. Torek's operation will give practically 100% satisfactory results. In bilateral cases usually one side only is operated upon at a time. In so far as the handling of the cord and the hernia is concerned, the technic does not differ essentially from that of Bevan as is shown by the slides. After this is properly disposed of the testicle and scrotum are sewn to the thigh. The obvious advantages are assurance that the testicle will remain well down and soon develop normally. With this operation results have been 100% satisfactory in our cases. In 4 to 8 weeks the testicles can be detached at second operation with 2 or 3 days hospitalization. These boys have no disability nor any discomfort from the abnormal position of the testis.

In cases of bilateral non descent usually one side only is operated upon at a sitting. The chief danger of bilateral operation is infection with the loss of the testicles.

Schapiro first introduced the hormonal treatment of undescended testicle in 1930. There are possible dangers if it is used indiscriminately. Some cases do not respond to the hormone.

Testicular development and descent depend largely upon the secretion of the anterior pituitary hormone. In some cases both growth and descent are remarkably influenced by this hormone.

The usual dose is 100 units of Antuitrin S or Follutein, two or three times a week, given subcutaneously. If there is no response after 12 to 20 doses there is usually mechanical obstruction and operation is required.

Bilateral non descent with small external genitals is probably best suited to hormonal treatment. Such cases may be associated with evidence of other endocrine deficiency. Not only does descent take place but normal development of the external genitals occurs.

Cases of unilateral non descent with normal external genital development may show rapid enlargement of the penis and scrotum under hormone without descent of the testicle. It is possible to develop precocious sexuality. Nocturnal emissions have been initiated. I believe the hormone should be used with caution and its effects carefully observed.

If descent does not take place with moderate dosage of the hormone, operation should be performed. With the hormone the descent, though incomplete, may be far enough to make the operation much easier.

Some cases require a combination of both hormonal and surgical treatment. In all cases it is proper to give the hormone a trial. If a hernia accompanies non descent, it will require treatment by surgery or injection.

In none of the literature, as nearly as I know, has anything been said about the treatment of the hernia that accompanies 90% of these cases of non descent. This will, beyond all doubt, at some time require treatment by surgery or injections. This is another reason why too prolonged use of the hormone is inadvisable, since surgery will be required in any event for cure of the hernia.

We believe that Anterior Pituitary like hormone is an adjuvant in the treatment of undescended testicle. That there is a large majority of cases that will not respond to this treatment is apparent. That too long continued use of the hormone may be harmful seems possible. A judicious trial of the hormone should be made in all cases.

DISCUSSION

DR. MILES BREUER, (Lincoln): I should like to ask which time is considered best to start the hormone treatment?

DR. A. F. TABORSKY, (Lincoln): I should like to ask Dr. Courtney what time he thinks surgery should be done in a case in which the testicle is in the abdomen and no response from hormone treatment—at what age?

DR. COURTNEY, (closing): In regard to scrotalization of the intra-abdominal testicle which has not responded to hormonal treatment, any time previous to puberty could be resorted to. It is important to get the testicle in the scrotum before puberty so that spermatogenesis will occur.

As to the best time to start hormonal treatment, as I have indicated, there is no particular advantage in getting the testicle into the scrotum except before puberty occurs. The hormonal treatment can be used safely from as early as four years until later years just before puberty.

Treatment of Psychoses by Insulin and Metrazol

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In the past two years, there has been a tremendous advance in the treatment of psychoses through the introduction of methods that constitute therapeutic achievements of great medical and social value. While these methods require special technical training and psychiatric experience, and so will not allow general usage, a knowledge of their scope should be a part of every physician's medical information.

In illustration of the seriousness of the problem of mental disease may be cited the fact that there are more hospital beds devoted to the care of the psychoses in this country than for all other diseases combined. Of all the beds in the institutions for mental cases, about 50% are occupied by patients suffering from schizophrenia (dementia praecox), whose average hospital residence has in the past been over sixteen years. The prognosis in schizophrenia has been heretofore uniformly bad, remissions of varying length occurring in about 25%.

The outlook for the psychoses, and particularly schizophrenia, was first dramatically changed by the use of insulin, and further help was obtained by the use of convulsions induced by metrazol.

This paper is based upon the observation of 130 insulin treated patients, and 71 patients treated by metrazol during the past year and a half. I will no more than touch upon our own work, which will be reported in detail at the coming meeting of the American Medical Association. It is my purpose to present more general information as to the methods in question.

HISTORICAL DATA

The hypoglycemic, or insulin shock treatment, of schizophrenia was begun by Manfred Sakel(1) in 1933, but a report in monograph form did not appear until 1935. Further reports were made by Sakel and Dussik(2) in June, 1936, and by Mueller(3), of Switzerland, in September, 1936. Since then, many articles have appeared in the current literature. An excellent monograph by Braunmühl,(4) dealing with the method, has just been published.

In this country, the method was first used by Cameron and in a few scattered clinics during the summer and early fall of 1936. Our own work began in October, 1936, and we were immediately impressed by the remarkable results obtained. A preliminary report, based on the treatment of 41 cases of schizophrenia, was made by us at the meeting of the American Psychiatric Association in May, 1937.(5) In this country in the past year and a half, the hypoglycemic shock method has been almost universally received as an outstanding advance in the therapy of schizophrenia.

The convulsive treatment of schizophrenia was introduced by Von Meduna of Budapest in July, 1935. As with malarial treatment in paresis, it was based upon clinical experience. It had been noted that schizophrenia was often favorably influenced by intercurrent convulsions. Von Meduna found that convulsions artificially induced by camphor brought about remarkable therapeutic effects, and later he employed cardiazol or metrazol in 10% solution intravenously, instead of camphor in oil intramuscularly. In this country, the method was first publicized by Friedman last May as a valuable method of treatment in schizophrenia. We have used it since last summer, and besides its application in schizophrenia, have independently found it to be almost a specific remedy in depressions of affective or manic depressive type.

METHOD

HYPOGLYCEMIA

The period of treatment varies from four to twelve weeks, and is divided into three phases.

Phase I consists of a preparatory period in which insulin is given on a fasting stomach once daily, starting with an initial dose of 20 units, and increasing the dosage 5 to 10 units daily until a dose is reached which produces coma, or insulin shock. Glucose is given four hours after insulin in amounts averaging 1.5 gram per unit of insulin to terminate the hypoglycemia.

Phase II consists of giving coma doses of insulin six days out of the week until a remission is obtained, or the patient is dismissed at the expiration of three months if no improvement has occurred. The dose of insulin required may vary from 30 to 300 units, with an average range of 70 to 120 units. According to the nature of the case and the patient's reactions to the hypoglycemia, the coma is allowed to continue for from a few minutes to an hour and a half. It is terminated by giving glucose through a nasal tube which is carefully introduced shortly after coma is reached. In case of emergency, glucose is given intravenously, preferably in 33% solution, followed by oral administration of adequate carbohydrate on awakening. The conduct of this phase of the treatment requires the greatest care and knowledge of technique with reference to insulin dosage and time of interruption of the hypoglycemia.

The relation of insulin dosage to the degree of hypoglycemic shock depends upon the factors of:

1. Insulin tolerance or resistance.
2. Sensitization to insulin.
3. Habituation to insulin.

The patient's organism may maintain a stable resistance with a consequent stable dosage. The patient may become sensitized to insulin, so that unless the physician becomes aware of what is happening, an irreversible hypoglycemia may occur and death result. The dosage should be held at that moment sufficient to produce shock, other factors remaining equal. On the other hand, habituation, or increased resistance, may develop, and require removal by special methods.

Again, it has been found that certain types of schizophrenia require individual types of hypoglycemia, which in turn increases the technical difficulties.

The clinical phenomena of the hypoglycemic states met in Phase I and Phase II include sweating, hypothermia, salivation, somnolence, myoclonic twitching and spasms, positive Babinski, pallor, occasional cyanosis, blood pressure changes, psychomotor excitement, coma, irregular pulse and respiration, extension tonic spasms, and epileptic seizures. This complex picture varies in individual cases, a fact which has led Sakel to emphasize three main shock types—wet shock, dry shock, and epileptic shock. It is the aim of the treatment to produce a coma with as little motor excitement as possible, as it has been found that prolonged excitement is harmful.

Phase III is initiated when the patient has become entirely free of psychotic symptoms, and consists of daily moderate insulin doses for one to two weeks.

CONVULSIVE TREATMENT

The convulsive treatment is best carried out with metrazol. The patient is alkalinized by sodium bicarbonate, 30 grams or one ounce three times daily. On a fasting stomach in the forenoon, an initial dose of 5 cc. is given slowly, intravenously, except in hypoglycemic states, where 3 to 3.5 cc. of a 10% solution of metrazol is injected. The convulsion occurs in from ten to thirty seconds. It is ushered in by twitching of the eyelids, a few clonic jerks of the extremities, and then with a typical epileptic cry, the mouth spasmodically opens wide, the head is retracted, and a generalized tonic extensor spasm takes place, the jaw closes tight, the face becomes cyanotic, the pulse rapid, and finally, in about thirty seconds, the convulsion passes into the clonic phase. As the clonic contractions cease, there is a momentary apnoea, and then respiration is reestablished with deep, stertorous, noisy breathing. In some older patients, at this stage there may be a marked irregularity of heart action, resembling a fibrillation, which may last several minutes. When the mouth opens, at the onset, a gauze or towel gag is placed between the molars, upon which the jaws clamp during the convulsion. Consciousness is regained in ten to thirty minutes.

These convulsions are usually repeated every one to three days. After the first convulsion, the injections are given as rapidly as possible, one cc. per second. In the affective psychoses, from three to fifteen convulsions usually suffice; in schizophrenia, from twenty to thirty convulsions may be necessary. When given in conjunction with hypoglycemia, a block of three to five convulsions given daily may be introduced in Phase II, no insulin being given, or convulsions may be introduced during the somnolent stage of hypoglycemia, during the second or third hour after insulin injection, and repeated at various intervals.

It is necessary to increase the dosage with successive convulsions generally by one cc., with a maximum dose not to exceed 15 cc. Some patients may convulse on initial doses of 3 to 4 cc.; others may require a daily one cc. increase of the dose up to 10 to 11 cc. before a convulsion takes place.

Patients taking the metrazol treatment alone, often show great antipathy to the injections, due probably to the intense stimulation of the sympathetic component of the autonomic nervous system. This fear of the metrazol injections is much less when given in the somnolent stage of hypoglycemia.

INDICATIONS FOR THE USE OF INSULIN

The use of insulin lies preeminently in the treatment of schizophrenia by hypoglycemic shock. Insulin in moderate doses may be used in other psychoses to improve nutrition and allay excitement. The decision as to whether a case of schizophrenia should be treated by hypoglycemic shock depends upon several factors:

1. Physical status. The patient should be free from serious organic disease. Active tuberculosis, renal or liver insufficiency, coronary sclerosis or angina pectoris, gross valvular disease, pronounced arterial hypertension states, thymuslymphaticus, endocrine disorders, all constitute contra-indications.

2. Age. Patients in the arteriosclerotic age are to be avoided. Between the ages of forty and fifty, patients should be selected with caution.

3. Duration of disease. The duration of the disease is the most significant factor in respect to prognosis. Cases of less than six months' duration give the highest percentage of recoveries. While remissions have occurred in cases of over three years, the percentage is small. Where the disease has existed one and a half years, the prognosis should be guarded, unless the case has shown a trend toward remission and also has retained affective capacity.

Good physical status, short duration, and retention of affect are therefore the favorable indications for treatment.

INDICATIONS FOR TREATMENT BY METRAZOL

In schizophrenia, it appears that the convulsive treatment produces remissions in a shorter time than insulin, though there is some question whether the results are as lasting.

The contra-indications for metrazol are the same as for insulin, except that metrazol, I believe, can be used more safely in the older patients. I have given convulsions, with good results, in a patient of sixty-two.

Metrazol is particularly useful in the stuporous types of schizophrenia. Here, as in other cases of schizophrenia, the convulsions may be combined with hypoglycemia with very good effect, particularly in the cases of long-standing. In certain cases, it seems hypoglycemia is necessary for good metrazol results.

Where the physician does not have adequate nursing help, metrazol is to be preferred, because the convulsive reaction lasts but a short time, and the patient needs attentive watching for not over a half hour. I believe the danger to life is less with metrazol than in hypoglycemia.

We have been extremely gratified by results obtained in depressive states marked by much tension. These are not depressive types of schizophrenia, but typical affective psychoses or melancholias. The therapeutic effects have been dramatic, a radical change in affect and behavior occurring often after two or three convulsions. The most noticeable result is the release of tension and the appearance of euphoria.

DANGERS OF HYPOGLYCEMIC TREATMENT

As stated previously, the danger of fatal accidents is associated with a low tolerance of sensitization to insulin. For this reason, in the treatment room there must always be available for immediate use, cardiac and respiratory stimulants, adrenalin, ampules of glucose solution for intravenus use, oxygen-carbon dioxide tanks, so that in case of threatening symptoms, the hypoglycemia may be terminated at once.

One must always be sure that enough glucose is given both at the termination period and also later in the day, because of the possibility of delayed shock, which, if not recognized, might prove fatal.

During coma, there is a progressive loss of function of the central nervous system, beginning first in the phylogenetically younger cortical levels and continuing toward the bulbar level. When signs of bulbar invasion develop with irregular respiration, weak and persistently rapid pulse, intravenous glucose is necessary.

Epileptic seizures in the fourth and fifth hour of hypoglycemia are always dangerous, and may initiate an uncontrollable status epilepticus with hyperthermia and cardiovascular collapse. They are best controlled with adrenalin, intravenus glucose with 500 to 1000 cc. normal saline, and if persistent, with intramuscular sodium luminal grains VII.

Pulmonary edema is an occasional, though rare complication, which may be rapidly fatal. It may be due to faulty tube feeding, in which some of the glucose solution passes into the bronchi. It is best controlled by morphine grain ¼, and atropin, grain 1/75, plus intravenous glucose and postural drainage.

While danger is always present, the technique of the treatment has become so developed that with the observance of its rules, one should not be unduly timid in subjecting any case to hypoglycemic shock. The prime requisite is the recognition of a progressive insulin sensitization. Recent reports by Sakel and Mueller, covering several hundred cases, give no mortality. In our own private series, we have had no deaths.

DANGERS IN THE METRAZOL TREATMENT

Metrazol, properly administered, has little or no mortality rate. Aften ten or more convulsions, the patient may become confused and amnesic, a state which may last a week or ten days. This has no serious significance.

Occasionally, the jaw may become dislocated in the initial spasdomic opening of the jaw, unless the jaw is supported by the nurse. It is also possible, if the limbs are restrained, that muscular contraction may dislocate a larger joint, as the shoulder, or even fracture a long bone, or the scapula. Such accidents are unusual.

In comparison with insulin, metrazol is relatively free from danger.

Another danger, not implicit in the treatment of the psychoses by metrazol and insulin, but a result of the dramatic and speedy results obtained by these methods, is the danger that the psychotherapeutic approach to these patients may be overlooked. After mental clarity is obtained, psychotherapeutic work, where possible, should be carried out.

RESULT OF TREATMENT

INSULIN

In any new treatment for an intractable disease, overenthusiasm may occur when frequent dramatic cures or improvements have been observed. For this reason, one should reserve final judgment until a very large series of cases has been observed. For instance, a consecutive series of 12 schizophrenic patients in our group, all men, with a duration of phychosis of less than six months, all treated by insulin, showed 11 patients securing a full remission, or a remission percentage of 91%. Against this, we have Sakel's results of 70% full remission in patients of six months' duration. Mueller gives a complete remission rate of 60% in the recent cases. In our own series of 70 patients treated from October, 1935, to October, 1937, the remission rate drops materially, being slightly below 60%. Another factor that enters here is the physician's judgment of the result. There is a temptation to be somewhat too optimistic about the result obtained.

Results should be classified in four groups:

1. Full remission, with ability to resume work.
2. Social or part remission, or ability to live at home, but not to work.
3. Improved, implying general improvement in hospital behavior, but unable to leave the hospital.
4. Unimproved—no change in psychosis.

It has been found that acute paranoid schizophrenics, who are actively hallucinating, show the best results with hypoglycemic shock. The excited catatonic cases also respond quite well. The stuporous catatonics require a special technique, but even then they are more resistant to treatment than the paranoid patients. The dull, apathetic, hebephrenic patients are the most refractory.

It has been our impression, and this has recently been noted elsewhere, that male patients do better with hypoglycemia than female. Metrazol appears to be more effective with women than insulin.

The accompanying chart gives results in seventy cases treated by the hypoglycemic shock method.

TABLE I

TABULATED RESULTS OF 70 CASES OF SCHIZOPHRENIA TREATED BY INSULIN THERAPY

Between October 1, 1936 and October 1, 1937

Duration	Number of Cases	Remissions	Incomplete Remissions	Improved	Unimproved
Symptoms under 1 year	43	24 55.8%	4 9.3%	5 11.8%	10 23.1%
Symptoms from 1 - 2 years	12	1 8%	2 17%	6 50%	3 25%
Symptoms over 2 years	15	0 0	1 6%	4 27%	10 67%
TOTAL	70	25 35.7%	7 10%	15 21.4%	23 32.9%

Follow-up of Cases with Remission

	Remissions	Incomplete Remissions
Total	25	7
Relapse symptoms	6	3

METRAZOL

The general percentage of remissions obtained with metrazol alone is practically the same as with insulin. However, it has been noticed that results are often obtained in a much shorter time than with insulin. Whether the remissions obtained are as lasting as with insulin, which has been denied by some European observers, remains to be seen. My own experience leads me to think that there is but little difference. However, at this date I do not care to be dogmatic.

I believe I can say freely that metrazol is indispensable in the treatment of the stuporous catatonics and the hebephrenic patients, either alone or combined with hypoglycemia. I have recently observed a patient with a schizophrenic psychosis of three years' duration, who, after two weeks of daily insulin comas without noticeable change, exhibited a marked gain in behavior and interest in her surroundings after a block of five daily metrazol convulsions was introduced in the course of her hypoglycemic treatment. I have also seen several patients, who had shown no material improvement after two months' insulin treatment, make marked gains or obtain full remissions with a course of convulsive treatment.

The most impressive results with metrazol are obtained in the depressions of affective type. In this group I would include both the depressed type of manic depressive psychosis and involutional melancholia. The use of metrazol in the depressions has not appeared generally in the literature. I first used it in a woman of forty-four, who had been depressed for six months, and who had been in the hospital two months, following the usual treatment of 30,000 U. of Theelin monthly, hydrotherapy, benzedrine sulphate, etc., without the slightest improvement. State hospitalization had been recommended, but was refused. Metrazol was then given. Almost immediately, a change for the better was noticed. Eight convulsions were employed. The patient was dismissed recovered in three weeks after the first convulsion.

In all, 19 cases of depression have been treated by us, with 10, or 52.6% recoveries. 8 cases, 42.1%, were markedly improved, in that the patients had lost their delusions and morbid affect, and were allowed to return home, but were not emotionally completely stabilized. Of these 8, one relapsed and was re-hospitalized. One case showed no improvement. In this case, a recurrent depression, there was marked slowing and loss of initiative, but no pronounced affective disturbance.

The duration of treatment is surprisingly short, averaging between three and four weeks. These cases, while as a rule the prognosis is good with institutional care, have hitherto required from three months to a year for recovery.

The accompanying chart illustrates our results with the depressions.

TABLE II

TREATMENT OF DEPRESSIVE PSYCHOSES WITH CONVULSIONS INDUCED BY METRAZOL

Name	Age	Sex	Diagnosis	Duration of Illness	No. of Convs.	Dosage cc.	Period of Treatment	Results	Remarks
A. H.	60	M	Recurrent depression	6 wks.	5	5-7	13 days	Recovery	
W. F.	21	M	Depression following a mild elation	4 mos.	5	5-8	14 days	Recovery	
A. J.	54	F	Depression	5 mos.	7	6.5-10.5	20 days	Marked improvement	
L. H.	27	F	Depression	4 mos.	7	5-10	20 days	Recovery	
M. A.	40	F	Depression	3 mos.	7	3-6	14 days	Recovery	
I. L.	54	F	Depression, suicidal	1 mo.	6	4-7	14 days	Recovery	
I. F.	35	F	Depression with anxiety	2½ mos.	9	4-7	26 days	Marked improvement	Relapse
L. M.	45	F	Depression	5 mos.	1	5	1 day	Recovery	Asymptomatic c.n.s. lues. Improved under Bismarsen and Theelin.
C. L.	36	F	Depression with retardation	6 mos.	4	6	14 days	Recovery	
N. T.	26	F	Depression with anxiety	8 mos.	8	5-8	21 days	Marked improvement	Returned to work
E. Se.	37	M	Depression with schizophrenic features	6 mos.	8	5-10	30 days	Recovery	
E. Sw.	52	M	Depression	9 mos.	8	3-4.5	24 days	Marked improvement	
A. P.	50	F	Recurrent depression	2 yrs.	14	5-10	36 days	Marked improvement	
A. S.	44	F	Agitated depression	2 yrs.	6	5-7	18 days	Recovery	
E. G.	41	F	Agitated depression	1½ yrs.	7	5-6	35 days	Recovery	
C. W.	43	F	Depression with schizophrenic features	2 yrs.	7	5-8	30 days	Marked improvement	
F. H.	54	M	Depression with marked slowing	2 yrs.	8	4-9	21 days	Unimproved	
G. C.	35	M	Depression	14 mos.	11	5-10	40 days	Improved	Recovery after discharge
P. G.	45	M	Depression, suicidal	16 mos.	5	5-7	21 days	Marked improvement	

Average Number of Convulsions.......... 7
Average Days of Treatment.......... 21.68
Recovery 10, 52.6%
Marked improvement 8, 42.1%

SUMMARY

In summary, it must be said that this brief and superficial accounting of experiences with the newer pharmacologic methods of treatment in the schizophrenic and depressive psychoses shows them to be a valuable adjunct and an advance in therapy.

In the schizophrenic groups, insulin or metrazol, or a combination of the two, are effective therapeutic agents, but it should be emphasized that the patient must be treated early.

Metrazol has been particularly effective in the treatment of the depressive reactions.

Finally, no matter how striking the results of any special method, treatment must continue along broad lines which focus the interest of the physician upon the patient and his adjustment to life situations, past, present and future.

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DO

Always drive at a reasonable speed, giving due consideration to traffic, road conditions, weather, etc.

Make sure that your car is at all times in good order, particularly as regards brakes, steering gear, lights and tires.

Do not pass other vehicles on the brow of a hill or on curves.

Do not cut in and out of traffic without adequate regard for safety.

Do not drive when you are not in full possession of your facilities.

Do give pedestrians, particularly children and the aged or infirm, the right of way.

Do not let your attention wander, either through conversation or sightseeing.

Do slow down when handicapped by approaching headlights.

Do always give proper and adequate hand signals before turning, slowing down or stopping.

Do strictly observe all traffic lights, stop signs and warning signals.

Do approach intersections, particularly blind intersections, with your car under complete control.

Do get into the left lane before turning left and into the right lane before turning right.

Do not pull into traffic without looking or giving proper signals.

Do not speed up instead of making way when a car wishes to pass.

Do cross grade crossings cautiously.

Do keep at an adequate stopping distance from the car ahead.

A Case of Black Widow Spider Bite Treated With Calcium Intravenously

CLAUDE T. MASON, M. D.,

Superior, Nebraska.

In view of the prevalence of the Black Widow spider (Latrodectus mactans), especially in rural sections, and the definite toxicity of the bite of the female, it is felt that a case report is of interest. During June, 1938, I encountered one suspected case and one proven case of Black Widow spider bite.

Gilbert and Stewart(1) in 1935 found that calcium salts intravenously gave instantaneous relief from the pain associated with the bite of the Black Widow spider. This pain is considered as being due to stimulation of the myoneural junctions by the toxin, and the calcium exerts a counteracting depressing effect. Narcotics and barbiturates do not give relief, though the sedative action of such drugs is of value. Calcium orally is not effective.

CASE REPORT

J. P. H., white, male, farmer, age 43 years, was bitten on the dorsal surface of the glans penis while using the outdoor privy on his farm at about 10 p. m. June 23, 1938. He described the sensation as similar to being suddenly struck with a red-hot needle. Within a few minutes he was suffering severe burning pain in the penis, perineum, and lower abdomen. He realized he must have been bitten by a Black Widow spider; so he tore the seat off the privy, found the spider in her web on the under surface of the seat, and captured her. The spider was a rather large female, the globular abdomen measuring 3/8 inch in diameter with the typical hour-glass shaped red spot on the ventral surface.

The patient arrived at my office at 10:30 p. m. and by that time (30 minutes after being bitten) was suffering agonizing cramping and burning pain of the abdomen and thighs as well as severe burning pain locally. A hypodermic of morphine and atropine was given at 10:45 p. m. An intravenous injection of 10 cc. of calcium chloride, containing 15½ grains, was started at 11 p. m. By the time 3 cc. had been injected all pain was relieved and the patient complained of a burning sensation in the soles of the feet and the palms of the hands. The injection was stopped till this disappeared and then was resumed very slowly, several interruptions being necessary because of this sensation in the palms and soles when the solution was given too rapidly. No local lesion was visible at this time. Iodine had been applied immediately after the bite occurred, but local treatment probably is of no value. A dressing of a mild ointment was applied. The patient returned to his home at midnight suffering no pain but quite weak in the legs.

The next morning, June 24, 1938, there was again considerable burning pain in the penis. There was slight swelling of the corona, practically encircling the glans, with the maximum swelling on the dorsal surface. This point was also slightly tender. Very severe cramping, aching, and rigidity of the muscles of the abdomen and legs had developed during the early morning hours, there having been complete relief for about six hours following the intravenous calcium. The abdomen was board-like and distended. Another hypodermic of morphine and atropine, an enema, and another intravenous dose of calcium chloride were given. Relief of pain during the intravenous injection again occurred. He was given a barbiturate to use every three hours if necessary for sedation.

On June 25, 1938, the patient was suffering severely with aching, cramping, and itching of the legs from the knees to the soles of the feet. Another hypodermic of morphine and atropine was given, and calcium gluconate gr. 15½ was administered intravenously. Pain was relieved within a few moments after the injection was completed, but not during the injection as with calcium chloride. On June 26, 1938, two doses of calcium gluconate were given to control the itching, burning, and aching of the ankles and feet. On June 27, 1938, no treatment was given and the patient was allowed to be up supervising the farm work. Soaking the feet in hot water kept the pain under control. On June 28, 1938, he reported to the office with persisting aching and weakness of the feet, which was relieved by another dose of calcium gluconate. All evidence of the local lesion had disappeared. General weakness and an exhausted feeling persisted for the next two weeks.

Temperature, pulse, and respiration were normal throughout the course of the illness. Blood pressure was possibly slightly elevated, ranging from 134/80 to 152/90. Urine showed slight albuminuria. Blood count was not done.

SUMMARY

A case is herewith reported in which treatment with calcium salts intravenously controlled the symptoms of a Black Widow spider bite, the most striking feature of which was severe pain and tetanic cramping of the muscles of the abdomen and extremities followed by a period of general weakness and exhaustion.

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MY, O MY!

Molly had just arrived back from a char-a-banc outing.

"How did you enjoy yourself Molly?" asked her grandma.

"O, it was all very beautiful, but you should just see the 'Devil's Gorge'."

"My dear," reproved the shocked old lady, "you shouldn't speak like that of your friends. I expect the ride and the fresh air gave them an appetite."—*Exchange.*

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EDITORIAL

ON AMERICAN MEDICAL DEMOCRACY

These lines are written in Chicago, during the Special Sessions of the House of Delegates of the American Medical Association. There will not be time to record in this issue the results of these momentous deliberations, but we hope to comment upon them in the November number of the Journal. Whatever the outcome, every member of this great Association may rest assured that there was not a delegate in attendance who may justly be accused of delivering anything but the best that was in him to the end that public and professional interests alike may be served. To the writer it was a thrilling experience to observe the serenity and the decorum that characterized the sessions. Every one present was bent upon the task of serving his members to the best of his ability.

For the past several years misguided reformers, in their attempt to disrupt the solidarity of organized medicine, have sung a lullaby of autocratic domination by a political clique in Chicago. In recent months especially their propaganda has become so noisy that even some physicians who are expected to possess a better understanding, have more or less "fallen" for this nonsensical stuff. "Medical politics" has in some instances become the byword of those doctors who find imitation easier than thinking and reasoning. The fact is that it is difficult to conceive of an organization the size of the American Medical Association to be conducted along more democratic procedures.

American Medicine is justly proud of its educational and scientific attainments. The American Medical Association, through its House of Delegates is truly the most democratic organization conceivable. Its achievements are not accidental. They are the result of careful and diligent effort of our representatives to improve constantly, not only the quality of the art and science of the profession, but as well in the delivery of medical service to the people of the United States. We recommend that every member of the Association visit the House of Delegates during one of its sessions. Aside from being an education, it is an enthusiastic spectacle to behold.

MENTAL HYGIENE AND THE PHYSICIAN

Mental diseases are steadily increasing. State hospitals are overcrowded, and many thousands of recognized and suspected cases of mental aberration are struggling with their unconquerable environment at their homes, waiting for a place in an institution for more adequate care. Difficult though their situation may appear, it is nevertheless a problem of little seriousness as compared with the pathetic thousands of patients whose manifestation of disease of the mind is overlooked, definite though the symptoms may at times appear on close analysis. Psychiatrists have for a long time warned about early symptoms of insanity. The situation is a serious one, often involving social and economic catastrophies to the family of the sufferer.

The consequences of deterioration in judgment of the early case of dementia is too well known to all practitioners to need reemphasis here.

Obviously if any progress is to be made in this social and economic, as well as medical dilemma, early diagnosis becomes the prime factor. This is of particular significance today in view of the encouraging results obtained through the various forms of newer treatments. It is to be hoped that the physician in general medical practice will train himself to think of these unfortunate conditions in the course of his daily routine and take ample precautions in arriving at a diagnosis. Only through such service will the suffering of these families be relieved. It will likewise afford the patient a better opportunity for earlier recovery.

A MESSAGE FROM YOUR PRESIDENT

The general plan of the activities of the Nebraska State Medical Association has been making rapid changes to keep up with the times. We have not accustomed ourselves as yet to the new By Laws adopted by our Association last spring. After we get used to some of the newer activities that have been planned to be more or less permanent, we shall be able to go forward with our work with a better understanding and also a better accomplishment of purpose.

One of our new plans for making our organization better and stronger is the formation of a Speaker's Bureau. We should endeavor to better understand the purpose of its formation. The Speaker's Bureau is part of the scheme to meet the call for speakers in our Public Health and Education Program. The plan for this Bureau originated within the American Medical Association to meet its part of the demands of the times for such a program. Organized medicine working through the A. M. A. and each State Association has assumed the responsibility for this plan. Our State Association must not fall behind other states in the performance of duty.

Our Speaker's Bureau should have stronger support than it now enjoys. There should be more names registered. All specialists in the state should participate. The specialist owes organized medicine this service for the protection which he receives from it. Every Nebraska Fellow of the American College of Surgeons; of the American College of Physicians; of the American College of Radiology; of any other medical order of specialists within the state and particularly those certified by the various Boards, should be registered in our Speaker's Bureau.

The Speakers Bureau should have a chance to function as it was intended to function by the A. M. A. committee that promulgated the idea. Originally the plan was designed to meet the need for speakers by the Maternal and Child Health program; also to meet the demand for speakers created by the drive against venereal diseases, and other activities stimulated by Federal funds. The Speaker's Bureau was therefore to be the source from which these speakers could be obtained for each of these several activities. It was also decided that the Speaker's Bureau might be of use to the Association activities within itself.

The original plan of function for the Speaker's Bureau would have this Bureau assume the responsibility of securing speakers for the State Director of Health after the selection of the speakers by our State Association Committees.

Below is a letter from the State Director of Health published by his permission which describes the procedure now followed. It varies somewhat from the original plan and places the burden of clerical work and correspondence on the chairman of the MCH Committee. This clerical work and correspondence should go into the Speaker's Bureau which employs a secretary paid at present by MCH funds. The Council should clear up the situation at its next regular meeting.

Lincoln, Nebraska, Sept. 7, 1938.

Homer Davis, M. D.,
President, NSMA,
Genoa, Nebraska.

Dear Doctor:

Your communication of the 5th instant with enclosure has been received. Apparently there is misunderstanding with regard to the procedure in establishing and authorizing refresher courses. This matter is being brought to your attention so as to avoid the complication and confusion that may arise over the question of authorization, which in fact involves the question of remuneration and the expenditure of funds from this department.

Briefly the procedure for refresher course is: The preliminary work is conducted by the Director of MCH in cooperation with the Executive Secretary and the councilor of the district under consideration. Upon determination for a course and the selection of tentative dates with the councilor, indicating the desired topics and speakers if there is a preference, you will then be called upon to indicate to us chosen speakers from the MCH special speakers' group that will supply the respective engagements, whereupon this office will clear through the Speaker's Bureau the dates, after which each speaker provided for that specific program will be notified by us that he is authorized to proceed to fill the engagement; this authorization being justification for our issuing a voucher in payment of his services.

The foregoing is the simplest and most direct method. It eliminates unnecessary correspondence and avoids the possibility of misunderstanding regarding the question of authorization. The Speaker's Bureau is involved only to the extent of clearing the dates for these courses, and is not charged with the responsibility of working out and arranging the MCH refresher course program. The above has proved satisfactory, has avoided confusion, is, I believe, understood by all, and I feel should not be changed.

As we see it, your principal part is to secure the respective speakers before submitting to us for clearance and authorization. It is hoped that this repetition will aid in clearing the question of procedure.

Respectfully,

P. H. BARTHOLOMEW, M. D.,
Ac. Dir. of Health.

Early or Late Ocular Syphilis May Resemble: Rheumatic fever, tuberculosis, focal infection, gonorrhea, brain tumor, glaucoma, "pink eye," toxic amblyopia, Leber's disease, multiple sclerosis, orbital tumor, cerebral hemorrhage, retinitis pigmentosa.—U. S. P. H. S. No. 5.

NEWS AND VIEWS

The office of the Nebraska State Medical Association is now 416 Federal Securities Bldg., Lincoln, Nebr.

Dr. C. A. Selby of North Platte has been appointed district surgeon for the fourth district of the Veterans of Foreign Wars.

The Denver County Medical society voted in August to establish an independent medical service plan to provide medical care to low income families under group prepayment methods.

Dr. Cleveland S. Simkins, formerly of the Medical College of the University of Tennessee, Memphis, Tenn., has been appointed head of the anatomy department of Creighton university medical school. He succeeds Dr. Augustus Pohlmann, who resigned.

An examination will be held December 5 to 9 for candidates for appointment as first lieutenants in the medical corps, regular army, the war department announced. The examination is open to men graduates of acceptable schools who have had a year as interne and are not over 32.

Dr. Charles McMartin and Dr. Arnold McDermott, both of Omaha, were appointed recently to serve on the medical staff of the Union Pacific railroad as consultant urologist and local surgeon, respectively.

MEDICINE UNDER THE NEW DEAL*

By H. L. MENCKEN

The project of the New Deal Kremlin to liquidate the American Medical Association under the Sherman Act appeared at first glance to be only an elephantine sort of practical joke, and in that character I discussed it lightly in the Sunpaper of August 5. But in a little while news came from Washington that the boys really proposed to go through with the show, and on August 13 a talented New Deal professor, Dr. Walton Hale Hamilton, was assigned to set me right about it and put me in my place.

I have read Dr. Hamilton's exposition in an humble spirit, but can only report that it leaves me profoundly unimpressed. It is smart but not adroit; voluptuous but not persuasive. Its substance is contained in the following paragraph:

> The technology of medicine has made its great advances by trial and error; the arrangements under which patients have access to medical services must be kept subject to a like revision. It is silly to encourage experimentation in the medical laboratory and to forbid it in the realm of medical economics.

* * *

Well, what does this mean? If it means anything at all, it means that the American Medical Association is opposed to all such experimentation, and is trying by some means or other to stop it. Is there any truth in that allegation? There is no truth in it whatsoever.

The plain and simple truth is that the Journal of the association, for eight or ten years past, has given over a large part of its space to the description and discussion of new "arrangements" of medical practice, and that more than one of these "arrangements" has been passed as unobjectionable, and is being tested at this very moment by members of the association in the highest standing.

I point, as a near and obvious example, to the scheme of the Associated Health Service of Baltimore. That organization, which now has nearly 25,000 members, is not only tolerated by the local bigwigs of the A. M. A., but was actually launched and underwritten by some of them. All of the Class A hospitals of Baltimore absolutely without exception, have agreed to accept subscribers to the service as patients, and all or nearly all of them contributed to the funds needed to set it going. Two of its directors are Dr. Winford H. Smith, director of the Johns Hopkins Hospital, and Dr. Arthur J. Lomas, director of the University Hospital, and not a few of the staff doctors of both hospitals have joined it as members, and brought in their wives and children.

The reasons for this tolerance are not far to seek. They lie in the plain and single fact that the Health Service does not undertake to practice medicine, but simply provides its members with hospital care and accommodation. Every one of them is free to choose his own doctor, and any doctor may be chosen who has the privilege of taking patients to any Baltimore hospital. There is no intervention between doctor and patient. There is no shading or conditioning of the doctor's professional dignity and independence.

The "arrangements" to which the American Medical Association objects, and quite properly objects, are entirely different. They not only offer hospital accommodation, but also medical service. They employ doctors, organize them into staffs, put them under superiors (some medical, but others lay), and hire them out to subscribers. Whatever the subscribers pay for their services goes, not to the doctors, but to the organization. It pays them whatever they are willing to work for, and keeps the rest.

Obviously, no doctor who works under such conditions can be said to maintain a strictly professional status. He may have a good job; he may like it, and he may give competent and conscientious service to the patients assigned to him, but in the last analysis they are the association's patients, not his. It may take them away from him at will, and assign him others. It may take them all away from him by dismissing him. They exist as his patients only by the association's grace, and only on conditions that it lays down.

Certainly the lawyers in the Department of Justice must be well aware that an analagous effort to invade and deprofessionalize their own profession has been under way for years and that nearly all the decent lawyers in America have opposed it violently and gone into court time and again to prevent it. All the objections that these decent lawyers have brought against the practice of law by corporations are valid against the practice of medicine by corporations. Both schemes, however artfully they may be disguised, involve the organization of professional men into gangs bossed by laymen and the retailing of their services to all comers. Both are completely destructive of their professional status.

* * *

The present disingenuous assault upon the American Medical Association did not originate in the Department of Justice. It originated in quite other quarters, and has been going on for a long while. There are doctors who aspire to office in the association, with all the honors and dignities thereto appertaining, but do not seem to be able to get the necessary votes; they appear to believe that their chances would be better under some sort of medical new deal. And there are quacks who have felt the association's heavy hand; they are against it on all counts and to the death.

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*Reprinted with permission from "The Sun" Baltimore.

Both these parties have been on the warpath for years. Of late they have been joined by a miscellaneous rabble of pinks, some of them outright converts to the Moscow hooey and others members of the "I'm Not a Communist—But" Association. The aim of these brethren is to nationalize the profession of medicine in the United States as it has been nationalized in Russia. Some of them say so frankly, and undertake to prove idiotically that the Russian system is better than the American. The rest, less honest, root for it without openly advocating it.

All the pink weeklies and other manic-depressive sheets are hot against the A. M. A. and belabor it constantly. They denounce it under the name of the medical trust, and allege that its members are racketeers who rob their patients and oppress the poor. The justice and decency of these charges may be indicated by putting them into concrete terms. What they allege, in plain English, is that such men as Dr. Thomas S. Cullen, Dr. Dean Lewis and Dr. John T. Finney are racketeers, and that scores of able and faithful men and women who labor in the John Hopkins and University of Maryland dispensaries every day are oppressors of the poor.

* * *

The Chief Butt of all such scurvy liars is Dr. Morris Fishbein, editor of the Journal of the American Medical Association. In the fulminations of the pink weeklies he is commonly promoted to the presidency of the association and depicted as its Stalin, Hitler, and Mussolini. I happen to be well acquainted with Dr. Fishbein, and may be presumed to have some qualification for judging him as an editor. It is my belief that no abler, more honest, more intelligent or more courageous editor is in practice in the United States. Week after week, year after year, he produces an unfailingly competent and valuable paper.

In all the history of American medicine, no other medical editor save his predecessor and mentor, Dr. George H. Simmons, has labored more valiantly and effectively to raise and safeguard the standards of the profession. He has been in the forefront of every effort, by whomsoever initiated, to put down buncombe and quackery and to promote sound medicine. Every improvement that has been made in his time, whether in professional education, in hospital service, in research and experiment, or in the bettering of relations between doctors and the public, has had his energetic support.

The quacks of all schools are naturally against him. The osteopaths and the chiropractors, the patent medicine harpies and the Christian Scientists have been banging away at him for years. Now they have got the support of the New Deal. It is a logical and legitimate alliance.

"A WORKABLE PLAN"

The "Indiana Plan" of preventive medicine was presented to the American Medical Association at San Francisco with the suggestion that it be expanded into a national program. The proposal was approved in principle by the House of Delegates.

Inaugurated January 1, 1938, the Indiana State Medical Association's program, described as "an idealistic effort to safeguard the health of all individuals" already has attracted the attention of national authorities on health and medical problems.

With The Journal of the state association as a central forum for an educational program conceived to prevent illness, county medical societies have concentrated each month this year on a specific disease or health problem of paramount public importance. Coordinating their work with the program of the Indiana State Board of Health, the various societies have furthered their educational work through luncheon clubs, parent teacher associations, and other lay civic organizations.

The program is outlined in the following material, reprinted from The Journal of the American Medical Association, Volume 111, No. 1, page 49.

Resolution Approving in Principle the Indiana Plan of Health Education and Preventive Medicine

Dr. H. G. Hamer, Indiana, presented the following resolution, which was referred to the Reference Committee on Medical Education:

WHEREAS, A pressing need exists for the development of a national policy on the part of organized medicine to bring the benefits of preventive medicine to all the people; and

WHEREAS, The medical profession, through its local county and state medical societies, already has made tremendous progress in developing programs local in scope; and

WHEREAS, A program of professional and lay health education is now functioning successfully in Indiana; and

WHEREAS, The profession in controlling tuberculosis, malaria, typhoid, diarrhea, yellow fever, puerperal sepsis and other infectious diseases has been largely responsible for the present favorable morbidity and mortality rates; and

WHEREAS, It is essential to make preventive medicine an integral part of organized medicine and individual private practice; and

WHEREAS, In order to put into immediate action at this session of the House a suggestion so ably stated on numerous occasions that "the attention of state and county societies should be drawn to the opportunity of assuming a definite leadership in the respective states and counties and directed with the best ideals of medicine and the best interests of the public"; therefore be it

RESOLVED, That the House of Delegates of the American Medical Association approves in principle the Indiana plan, a copy of which follows, of health education and preventive medicine and directs the Bureau of Health Education of the American Medical Association to bring this plan to the attention of the medical profession and the lay public through all available channels.

AN ANTIDOTE FOR STATE MEDICINE

Frequently today the physician finds articles in the press questioning his efficiency and his methods of practice. Such articles accuse him of ignoring preventive medicine in his daily work. He is bewildered and defensive in his attitude, for he feels that he is doing his job well. Even superficial observation will disclose the marked drop in death rate as a result of measures instituted by the medical profession in controlling tuberculosis, malaria, typhoid, diarrhea, yellow fever, puerperal sepsis and other infectious diseases. Preventive medicine is now being practiced by all physicians as private practitioners to some degree. In many parts of the state, county medical units have a definite program. The time is ripe to correlate these scattered activities, survey our local situations, and acquaint the public with the extent of this phase of our work.

Many phases of preventive medicine have advanced by stimulation from outside groups. Drives have been sponsored with much misunderstanding. Preventive medicine has now reached its maturity and should be utilized to the fullest by organized medicine and by the individual doctor. It is futile for one county or state to try to promote this alone. Disease and disaster are not aware of state borders. A national policy on the part of organized medicine is needed now.

Too long have we kept our light under a bushel. It is time to take the offensive. The amount of preventive medicine can be increased by the private practitioner with definite benefit to his community and to himself, and the public will be made to realize that American Medicine is pliable enough to continue as an individualistic enterprise.

Throughout the ages, medicine has adapted itself to social changes. We are now in one of those states of changing social customs and aspirations. The American public looks to organized medicine for leadership. Prevention of disease, early recognition of defects and diseases, reduction of hazards and prolongation of life are the important functions of a physician.

In Indiana we have visualized preventive medicine as a wheel with each spoke representing some important phase. Each phase is featured as a "Topic of the Month" in the Journal of the Indiana State Medical Association and is announced or discussed in each county medical society the month the subject is featured. The topic of the month is given support in the press and is discussed by speakers before medical and lay groups.

TOPICS OF THE MONTH

January—Formulation of Plan.
February—Syphilis.
March—Pneumonia.
April—Diphtheria.
May—Maternal and Child Health.
June—Crippled Children.
July—Highway Accidents.
August—Occupational Diseases.
September—Annual Physical Examinations and Heart Disease.
October—Conservation of Eyesight.
November—Tuberculosis.
December—Smallpox.

PURPOSE

To promote aggressive leadership by Organized Medicine in Prevention of Disease and early detection of defects.

To incorporate preventive medicine as an important phase of private practice and of county medical activity.

To promote a National Health Program with emphasis on Prevention of Disease sponsored by the American Medical Association with due regard for local situations.

Our modern age demands cooperative efforts by organized medicine to distribute modern medicine.

DIVIDENDS OR RESULTS

1. Create good will and public approval.
2. Raise general standard of medical practice.
3. Prevent many deaths and much suffering.
4. Give a better ordered life for the doctor.
5. Give a steadier income for the doctor.
6. Intelligent defense against disease is our best defense against government encroachment.

ALTERNATIVE

Noisy and aggressive lay groups will seize leadership and we will trail behind, cloaked with heavy governmental supervision.

ANNOUNCEMENTS

The next basic science examination will be given October 4 and 5, 1938, State House, Lincoln, Nebraska.

The next medical examination will be given November 25 and 26, 1938, State Capitol Building, Lincoln, Nebraska.

All applications must be on file at least 15 days prior to first day of examination.

Mrs. Clark Perkins,
Director Bureau of Examining Boards.

AN APPEAL FOR COOPERATION

The survey for medical needs in Nebraska is still on. If you have not yet returned the completed blank please do so at once. Remember the problem is yours. You are asked for cooperation. Reformers have surveyed these needs. The government has studied them. You are requested to give your version. Will you state your opinion or do you wish to be represented by the reformers?

Homer Davis,
President Nebraska State Medical Association.

ANNOUNCEMENT

Dr. C. M. Hyland of Los Angeles, California, will speak before a group of women on October 26th. His subject will be "The Use of Convalescent Human Blood Serum in the Treatment of Disease."

Dr. Hyland is a pioneer in this type of therapy and is exceptionally well qualified to talk on this subject. His work is conducted in connection with the Children's Hospital in Los Angeles. His equipment for processing human blood into convalescent serum is outstanding.

The talk is sponsored by the Nebraska State Medical Association with the help of the Woman's Auxiliary of the Omaha Douglas County Medical Society. It is hoped to interest numerous organizations in Omaha and throughout the state.

Dr. Floyd S. Clarke.

THE OMAHA MID-WEST CLINICAL SOCIETY

The Omaha Mid-West Clinical Society will hold its regular annual assembly in the Hotel Paxton, Omaha, on October 24 to 28 inclusive.

As in previous years, this Society is planning on a thorough post graduate course covering all the important branches of medicine and surgery. The complete details of the program will be mailed to each individual physician.

Particular attention is called to the lectures and demonstrations given by the local men of the faculties of Creighton and University of Nebraska Medicine Colleges. These lectures are arranged to suit the individual needs of the physicians in attendance. They are designed to bring before these physicians not only principles embracing the subject discussed, but their bedside application as well. Emphasis is placed on the practical utilization of recent procedures in diagnosis and therapeutics. An effort has been made to cover in detail the various subjects to be discussed from the point of view of the latest developments in these particular branches.

The Society hopes that every physician in this state will make a conscientious effort to take in this program. The guest speakers have been chosen from the ranks covering the highest caliber in medicine and surgery in their specialties. A list of the guest speakers is submitted.

Dr. Henry Leroy Bockus, Internist, Philadelphia, Pa.

Dr. Robert Tilden Frank, Gynecologist and Ostetrician, New York City.

Dr. Cameron Haight, Surgeon, Ann Arbor, Mich.

Dr. Edward Leland Jenkinson, Radiologist, Chicago, Ill.

Dr. Louis Jacob Hirschman, Surgeon, Detroit, Mich.

Dr. Foster Kennedy, Neurologist, New York City.

Dr. Gordon Balgarnie New, Otolaryngologist, Rochester, Minn.

Dr. Oliver Samuel Ormsby, Dermatologist and Syphilologist, Chicago, Ill.

Dr. Oliver Hazard Perry Pepper, Internist, Philadelphia, Pa.

Dr. Heyworth Naylor Sanford, Pediatrician, Chicago, Ill.

Dr. Alfred Rives Shands, Jr., Orthopaedic Surgeon, Wilmington, Del.

Dr. Robert Maxwell Grier, Gynecologist and Obstetrician, Evanston, Ill.

Dr. John Silas Lundy, Anesthetist, Rochester, Minn.

Dr. Kenneth Cecil McCarthy, Anesthetist, Toledo, Ohio.

Dr. Archibald Ross McIntyre, Physiologist and Pharmacologist, Omaha, Nebr.

Dr. Ralph Milton Water, Anesthetist, Madison, Wis.

WOMAN'S AUXILIARY

Message to the Nebraska County Auxiliaries

It is the wish of the Executive Committee of the Auxiliary that we know the names of all chairmen of county committees as soon as possible. In addition to the Chairman of Hygeia we would like each Auxiliary with more than one county to appoint a person from each county as a member of the Hygeia committee. It will be our aim to spread the use of Hygeia throughout the state, and one person can not contact all of the six, or four or three counties in her district. If Hygeia is used as the basis of health programs, we will find our programs will have more correct information, and the ones responsible for them will have less difficulty in presenting them.

We would like also to know the names of all advisory committees. A list of the advisory committees and the officers and chairmen of committees in each Auxiliary will be given to each Auxiliary, thus facilitating communication if it becomes necessary. It will also help the next president to become familiar with each organization this year, so she will know the strong spots. Remember to contact our Public Relations Chairman, Mrs. E. S. Wegner, Lincoln, for speakers from the Speaker's Bureau of the State Medical Association. We hope that some of the Auxiliaries which were active in past years will read our messages in the Journal and realize that the Doctor's wife has a definite place to fill this year in establishing a contact with other groups, and join with us again. Our committees are so excellent and the work is reduced to a minimum by our use of Hygeia. The wives of the County Society members could meet at the same time they meet and present a Hygeia program and have a social time and a discussion worth while. Every county society should wish the Auxiliary to have one meeting to discuss any report Doctor Leland sends to us through our National President, Mrs. C. C. Tomlinson. This report should be sufficient reason for all wives of medical men to unite in a discussion.

Please let me hear from all counties which have not sent in a list of committees. There are many interesting things being done by our Auxiliary members which are not strictly in our program, but which are of vital importance to the spread of health information. I know of no place where you can learn of these things unless you attend Auxiliary meetings. For instance the Summer Round-up plans of the P. T. A. are ably presented by one of our members chosen by the P. T. A., and also the T. B. Association chose one of our members to help. These things can't be written because of time, but all can attend Auxiliary meetings and know of them.

Mrs. C. W. Pollard, President.
President.

First Meeting Nebraska Medical Auxiliary, 1938

The regular fall meeting of the Nebraska medical auxiliary was held Friday, Sept. 9 at the home of the president, Mrs. C. W. Pollard, Omaha, with nearly a 100% attendance. The National President, Mrs. C. C. Tomlinson was the honor guest. She asked that the auxiliary members inform themselves in ways to be of aid to the medical profession, as wives can be a great influence if prepared. She told us to be correctly informed about the social security law, and keep in contact with developments.

An idea was advanced by the President and several others for the Auxiliary dues to be deducted from the dues a doctor pays to the medical society, thus making his wife automatically a member of the Auxiliary. Our Organization Chairman would then have to organize working units from among the members. This idea will be discussed later. It was suggested that members become familiar with Doctor Farris's report on Public Health in Nebraska, as well as Doctor John Sennings, (Professor of Economics at the U. of N.), report on County Government.

Each member was asked to have her husband bring home to her his national, state and local journals and the Executive Secretary's report, so we may be aware of all problems even though we do nothing about them.

Mrs. H. W. Benson of Oakland is a Special representative from the Auxiliary to aid in the T. B. work.

Mrs. Herman Johnson has been selected by the State P. T. A. to help with their summer round-up work. It is particularly fitting to have an Auxiliary member do this, and we are glad they chose our secretary.

The next meeting will be in January. Plans for the May convention will be decided. The president expressed a desire to eliminate entertainment from our general meeting day, as it should be devoted to reports of work done in the counties through the year. Public Relations is to be stressed this year so our counties will have good reports.

Mrs. Fred Ferciot,
Chairman Publicity.

ARE YOU HELPING IN THE SURVEY?

For years the medical profession has been subjected to criticism over the methods of distributing medical care. The criticism has come largely from philanthropic sources under the stimulus of misguided sociologists whose impractical theories seek to establish an impossible Utopia in the realm of medical care. In an effort to sell their bill of goods to the citizens of the United States numerous surveys were made, figures compiled, deductions submitted, and finally the whole problem "clarified," if only the stand-pat American Medical Association could be whipped into line! Unsuccessful in their attempt to extract obedience from organized medicine, the reformers embarked upon the "pressure-group" system so notoriously popular in Washington today.

These vociferous groups, it must be understood, are no amateurs at their task. Fully appreciative of the Capitol's weakness for surveys, they are armed to the teeth with figures. And true to Washington tradition of the day, these numbers run in the millions. Thus "Millions of Americans suffer from want of medical care. Tens of millions suffer from lack of dental care. Millions of American citizens never see a doctor unless the end is near, etc., etc." Always in millions! The reason for these unwieldy, not to say doubtful, figures must be obvious. Again it is taking advantage of political weaknesses. To the average office-holder these numbers represent just that many votes.

The officers of the American Medical Association, aware of the importance of statistical evidence, last spring suggested that inasmuch as the results of the surveys thus far quoted are open to dispute, more reliable data could be obtained from a direct canvas among those directly concerned with dispensing medical care—the doctors. Accordingly a comprehensive outline was devised which aims to cover the various angles involved. These questionnaires were forwarded to the county medical societies to be filled out by the members of these local units. This it is hoped may supply adequate and first hand information on the problem, and depict the true situation with regard to the availability of care to the people of this country.

Unfortunately there has been a misunderstanding, or rather a lack of understanding, as to the purposes of the survey. Some of the physicians have failed to reply because they did not appreciate the origin or significance of the questionnaire. Some thought that it was a political venture. Others that it was an effort to prove the needs for state medicine. Still others that it is too involved to convey any practical information. Then there are, unfortunately, those few who are against anything that requires effort.

The fact remains that the survey is a most important undertaking. It affords the profession a voice in its own affairs. It is not an attempt on the part of anyone to pry into the individual physician's business. The blanks are not to be signed. It is merely a conscientious effort on the part of the officers of our own Association to get at the truth of the contention of the pressure group as to the extent of the problem over which they make so much noise. It would be a pity indeed if the indifference or the antagonism of the few would allow this study to fall by the wayside. A few moments of our time should not be considered burdensome. The problem is ours and we must attempt its solution through our own efforts. We can do a better job of it than those who make accusations against us. Filling out blanks is a nuisance to be sure, but not as much nuisance we maintain, as may be involved should our accusers have their way.

If you have not yet filled out your blank please do so at once and forward it to the office of your Society. —From The Bulletin, Omaha-Douglas County Medical Society.

STATEMENT OF THE BOARD OF TRUSTEES, ARTHUR H. BOOTH, CHAIRMAN OF THE SPECIAL SESSION OF THE HOUSE OF DELEGATES, CHICAGO, SEPT. 16, 1938

For the third time in the history of the American Medical Association your Board of Trustees, in accordance with the power conferred on it by the By-Laws of the Association, has called you into a special session. On two previous occasions, once when our country was at war and the services of the American Medical Association were required to provide medical officers for our troops and physicians to aid in the work of the selective service boards, and on another occasion when the Social Security Act was first proposed to the Congress, you were called into special session. The specific purposes for which you have been called on this occasion have been announced to you by the Speaker of the House of Delegates and by the Secretary of the Association.

Following the presentation of the statement of Miss Josephine Roche to the House of Delegates at the San Francisco session, the National Health Conference met in Washington, July 18, 19 and 20. From that conference there emanated, as you already know, a National Health Program developed by a technical committee, which, in turn, had been appointed by the Interdepartmental Committee on Health and Welfare appointed by the President of the United States. The National Health Conference was a meeting attended by representatives of labor and welfare agencies, medical organizations, social workers and other groups. The program which is now presented to you was presented to the National Health Conference by representatives of various governmental agencies responsible for the conference and by the Technical Committee that has been mentioned. Little opportunity was given for discussion by those in attendance on the Conference of the specific proposals that were made. The President of the Association, your Secretary, the Chairman of the Board of Trustees, the Editor of The Journal, the chairman of your Committee on Medical Service, and the chairmen of your Councils on Scientific Assembly and on Industrial Health who were invited individually to participate in the conference, all made clear to the Conference the fact that only the House of Delegates of the American Medical Association is empowered to establish policies and that only the House of Delegates may establish for the American Medical Association a policy relative to the various proposals that were made. In submitting these proposals to you the Board would point out that at the calling of the National Health Conference it was stipuated that no formal action would be taken by that conference. Nevertheless, responsible representatives of the government have indicated that the proposals made would be embodied in legislation to be submitted to the Congress of the United States when next it meets.

For these reasons and particularly because the Congress of the United States will be convened before the House of Delegates will again meet in regular session, the Board of Trustees considered it advisable to call this special session of the House of Delegates in order that your representatives may be able to present your point of view as representatives of the American medical profession, to the people and to the Congress of the United States and to take such other action as may be deemed necessary to make your views effective.

The Board of Trustees will not at this time read to the House of Delegates in detail the complete text of the proposals or even the abstract of the five chief proposals that have been made. These proposals concern briefly (1) expansion of public health service, (2) increase of hospital facilities, (3) medical care for the medically indigent, (4) a general program for medical care, and (5) a program for compulsory sickness insurance covering the entire population of the United States.

These five proposals, it has been suggested, may well be submitted to five special reference committees of this House of Delegates, each of which will concern itself with the details of one of these five proposals and at the same time give consideration to such alternative proposals for meeting the same needs as may arise from the medical profession itself.

The complete text of the proposed National Health Program was published in The Journal of The American Medical Association immediately after the conclusions of the National Health Conference and has thus been made available to the entire medical profession of the country. In order, however, that you may have this material immediately before you, there is now being given to each of you a copy of the complete text of the National Health Program to be used in your consideration of this subject.

In submitting these proposals to the National Health Conference the statement was made by various representatives of our government that it was not contemplated that this entire program would be made immediately effective but rather that there might over a term of approximately ten years be developed such a program, according to the "blue prints" offered, so that expansion of medical and public health activities in the United States during the next ten years might follow the definite procedure here outlined. On you, therefore, rests a serious burden—the burden not only of planning for the immediate needs in the field of medical care in the United States but also for setting forth the policies and views of the medical profession in relationship to medical care and in relationship to this "blue print."

Your responsibility is great. The medical profession of the entire country awaits anxiously the answer that you will make. Recognizing the manner in which the House of Delegates has in the past accepted the obligation placed on it to represent the point of view of 110,000 American physicians, of whom you are the authorized representatives, we are confident that you will make your decisions calmly, carefully, and with the same sympathetic consideration for the needs of the people of this country that has characterized your actions in the past.

The results of your deliberations as expressed in this special session of the House of Delegates will be the guiding and determining voice for the medical profession, on those whom you authorize to make your voice effective, until the House of Delegates may at some future time determine any other action.

Investigation by the Department of Justice

Shortly after the termination of the National Health Conference an announcement was released to the newspapers and to the press of the United States indicating that the Department of Justice of the United States government proposed to seek an indictment of the American Medical Association as a monopoly, unless the American Medical Association, through its central organization or through its constituent society in the District of Columbia, consented to certain stipulations satisfactory to the Department of Justice in relationship to the nature of medical practice. An investigator from the Department of Justice has consulted some of the correspondence in the headquarters office of the American Medical Association. At no time has an office or unofficial communication ever been received from the Attorney General of the United States, Homer Cummings, or from his assistant, Thurman Arnold, or from any other representative of the Department of Justice. The association knows of this matter otherwise only through the statements released to the press.

In response to numerous inquiries that have come to the officers of the Association and to the headquarters, the statement has been made repeatedly that the American Medical Association welcomes investigation by any authorized agency of the nature of its organization, of its methods of work, of the conduct of its affairs and of its activities, firmly reliant on the belief that every action taken by the Association has been in accordance with its constitutional organization in the interest of the public welfare, and for advancing the standards and quality of medical service for the American people; and that at no time has it violated the established law of the federal, state or municipal governments of this country. Moreover, by the very nature of its organization, it has observed constantly the democratic principles on which the government of the United States is founded and maintained.

Social Security Act

As this House of Delegates is aware, the American Medical Association is a federacy of its constituent associations, established to promote the science and art of medicine and the betterment of public health. In accordance with the provision of the Social Security Act, an organization of this type is considered to be exempt from those stipulations of the act assessing taxation. According to the original ruling of a deputy commissioner of internal revenue, the American Medical Association has been until recently exempt from these provisions. It has indeed proposed to establish voluntarily a plan for the security of the employees of the Association, and this plan was approved by the House of Delegates at the San Francisco session. More recently special interpretation of the law has been made by another deputy commissioner whereby the American Medical Association, formerly classified with educational and scientific groups, is now classified as a business league and required under the act to pay considerable tax covering all its employees. Your Board of Trustees, after careful consideration, has determined to appeal from this interpretation and accordingly has employed special counsel to undertake the handling of this appeal to restore the Association to its original and proper classifications as a scientific and educational organization. The appeal made by your Board of Trustees is not an attempt to evade the requirements of any legislation enacted by the Congress of the United States. We have inthe past conformed fully to every law, and it is our purpose that we shall continue to conform to the law if, as and when it may be established by the courts of the United States that the interpretation of the law by various governmental agencies is in accord with the opinion of the courts that this is the law.

THE ELKHORN VALLEY MEDICAL SOCIETY

The Elkhorn Valley Medical Society held its annual meeting at the Norfolk Country Club, August 25, 1938. About seventy-five physicians attended the meeting. Following golf in the morning, the doctors were entertained at a noon luncheon. The afternoon session was devoted to scientific program which consisted of the following papers:

Dr. John C. Egan, Madison, "Nodular Cirrhosis of the Liver."

Dr. F. J. Murray, Omaha, "Preoperative Block Radiation in Carcinoma of Breast."

Dr. H. B. Hunt, Omaha, "Treatment of Carcinoma of Head and Neck."

Dr. Byron E. Hall, Rochester, Minn., "Medical Emergencies Arising in Blood Dyscrasias."

Election of officers took place following the scientific sessions. Dr. C. C. Barr of Tilden was elected president, suceeding Dr. H. N. Morrow of Fremont. Other officers are Dr. J. W. B. Smith, Albion, vice president, and Dr. E. L. Brush, Norfolk, secretary, reelected.

TUBERCULOSIS ABSTRACTS

The courage of tuberculosis workers ebbs from time to time because progress is so fitful and slow. A popular writer bemoans the great lag between what we, as a people, know and what we actually apply in the phrase, "the frustration of science." But that our efforts to improve conditions do ultimately yield fruit is attested by bits of evidence that come to light from time to time. Such evidence is furnished by a study reported by one of England's noted tuberculosis specialists, Dr. G. Lissant Cox. Excerpts of his article follow:

Duration of Life of Tuberculosis Patients

For many years efforts have been made in Lancashire (England) to educate the public to seek medical advice as soon as certain symptoms of tuberculosis manifest themselves. In an attempt to assess the value of such education the author, who is the Tuberculosis Officer of Lancashire, has measured the period of illness before the patient was examined for the first time by the Tuberculosis Officer and the duration of his life after that time. The period of illness before the Tuberculosis Officer's examination was sub-divided to show (a) how long the patient waited before consulting his medical attendant and (b) how long he remained under his care before being referred to the Tuberculosis Officer. Such measurements were made for two selected years, 1920 and 1935 and compared. More than 200 consecutive cases were included in each year's study.

The investigation was made only of patients who had died of tuberculosis, which limited the inquiry to the more advanced cases. To put the question of diagnosis beyond doubt, only cases with tubercle bacilli in the sputum were included. These restrictions naturally excluded the more hopeful types of cases. The conclusions reached were that:

1. The duration of illness, from the appearance of the first symptom to consultation with the Tuberculosis Officer, averaged 16.7 months for

the 1920 group and 12.5 months for the 1935 group.

2. This reduction of 4.2 months' delay was due to (a) earlier consultation with the family doctor and (b) more prompt reference of the patient to the Tuberculosis Officer.

3. The 1935 group lived on an average of 9.1 months longer than the 1920 group after the initial examination by the Tuberculosis Officer.

4. The longer duration of life may be due to (a) examination of the patient in an earlier stage, (b) better living conditions, (c) improved methods of treatment. It is not possible, however, to assess the value of modern methods of treatment as the investigation deals only with patients who died, taking no account of patients who are still under supervision or who have recovered.

5. Efforts to encourage patients to seek treatment earlier has met with some success. The average delay was reduced by some 25%.

Average Duration of Illness of Positive Sputum Patients, G. Lissant Cox, M.A., M.D. Cantab., The Medical Officer, April 16, 1938.

Numerous communities have recently undertaken tuberculosis case-finding work by the method of making tuberculin tests of school children and examining the positive reactors with the X-ray. Some skepticism as to the value of this method has been voiced because the results are not so "productive" as the older method of confining the examination to contracts of open cases The two methods should be evaluated, but not with the purpose of selecting one method to the *exclusion* of the other. A group of workers review a three-year tuberculin test program carried out in the public schools by the staff of a county tuberculosis hospital, and compare the results with the results obtained by the routine examination of contact and suspect cases made in the same hospital during the same period.

HUMAN INTEREST TALES

Dr. and Mrs. C. G. Moore of Fremont are touring Europe.

Dr. and Mrs. Royal Jester of Kearney vacationed in Colorado.

Dr. Kenneth Prescott of Tecumseh has located in Long Pine.

Dr. R. H. Easton, formerly of Bennett, has moved to Stromsburg.

Dr. and Mrs. C. A. Lutgen of Auburn visited Minnesota in August.

Dr. J. G. Allen of Craig vacationed with his family on the west coast.

Dr. Charlotte Seiver of Fremont toured Canada early in September.

Dr. C. C. Lull, formerly of Fort Peck, Montana, has located in Stamford.

Dr. M. F. Arnholt of Lincoln was recently a patient in a Lincoln hospital.

Dr. and Mrs. A. W. Anderson of Lexington spent their vacation in Colorado in August.

Dr. and Mrs. L. M. Stearns of Kearney spent a week in Michigan last August.

Dr. and Mrs. N. H. Morrow of Fremont vacationed in Minnesota in August.

Dr. and Mrs. E. J. Angle of Lincoln spent the latter part of August in Minnesota.

Dr. E. C. Hanish of St. Paul spent the early part of September in Salt Lake City.

Dr. Walter E. Goehring has become associated with Dr. J. A. Lanspa of Tecumseh.

Dr. and Mrs. D. H. Morgan of McCook spent the latter part of August in Colorado.

Dr. and Mrs. E. F. Leininger of McCook spent several days in Denver, early in September.

According to press reports, Dr. V. E. Levine of Omaha is stranded at Point Barrow, Alaska.

Dr. Richard Fitzgerald, a recent graduate of Nebraska Medical College, has located in Wauneta.

Dr. George W. Ainlay of Fairbury is attending courses in the Army Medical College in Washington.

Dr. L. L. Loder of Tilden has joined the Michigan State Medical School in the department of ophthalmology.

Dr. H. R. Palmateer of Madison after eight months study in New Orleans and Chicago, has returned to Madison.

Dr. R. E. Roche of Sidney was slightly injured recently when he fell on the deck of the steamer while crossing the Irish Sea.

Dr. Clarence S. Moran of Creighton University faculty, spent the summer at the Massachusetts General hospital in Boston.

DEATHS

Czar C. Johnson, Lincoln. Born in Sidney, Iowa, March 4, 1881, he moved with his parents to a farm west of Madison, Nebr. He attended Creighton University and graduated from the Medical School in 1907. Following graduation located in Creighton, Nebr., where he remained a short time. He then located in Madison and became associated with the late Dr. E. N. Smart. Following his service in the World war, he settled in Lincoln in 1919. He immediately became active in civic and organizational work and was especially active in the Nebraska State Medical Association. Death came on August 21, at his home, following a cardiac crisis.

Dr. J. R. Taylor, Sidney, long time active in civic and professional affairs of the district, manager of the Sidney Hospital. Died in Denver, September 1, of myocarditis. Dr. Taylor came to Sidney in the early twenties and was a member of the Nebraska State Medical Association. He had graduated from the University Medical College of Virginia in 1907. Age at death, 69 years.

Dr. Guy Seward, Fremont. Born in Smithfield, Pennsylvania, March 24, 1874. He graduated from Barnes Medical College in 1902, and located in western Iowa. Came to Fremont in 1924. The doctor was active in civic affairs and in the American Legion. He served in the Spanish-American and the World wars. Died September 6 in an Omaha hospital, of myocarditis. His wife and a sister survive.

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Anterior Pituitary-Gonad Relationship in the Female With Clinical Application*

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St. Louis

The anterior pituitary is supposed to secrete two gonadotropic hormones, namely, the follicle stimulating hormone and the luteinizing hormone. It is still a disputed question whether these are two distinct hormones or whether these two effects on the follicle are the result of the action of a single hormone under different conditions occuring during the normal menstrual cycle.

OVARIAN HORMONES

a. Dihydrotheelin. Doisy and co-workers on March 22, 1935, reported the isolation of an ovarian follicular hormone in crystalline form from the follicular fluid of pigs' ovaries. This is the only estrogenic hormone that has been proved to be secreted by the follicle of the ovary. It seems to be identical with a reduction product which was made synthetically and which was also known as dihydrotheelin.

b. Progesterone. Progesterone is the official name for the luteinizing hormone secreted by the corpus luteum of the ovary. The name progesterone is a combination of two names for the same hormone, namely, Progestin, isolated by Corner and Allen of the University of Rochester, and Luteosterone, isolated by Butenandt and Slotta of Germany. Therefore, the word Progesterone is a contraction of the two terms used for the same substance. Progestin has been produced synthetically from Pregnandiol, which is found in the urine of pregnant women and also from Stigmasterol, a wax obtained from soy beans. It has recently been found that if Progesterone is injected into the body it can be almost completely recovered in the urine as pregnandiol, indicating that pregnandiol is an oxidation product of its precursor progesterone.

PLACENTAL OR URINE HORMONES

The placental hormones are supposed to be secreted by the placenta and are chiefly recovered from pregnancy urine, but may be recovered to some extent from amniotic fluid. The first and most important of these placental hormones is Theelin.

a. *Theelin.* Zondek and Aschheim in 1927 found that the urine of pregnant women contains large quantities of estrogenic hormone. Doisy, using such urine, was the first to isolate an estrogenic hormone in crystalline form and this he named Theelin.

b. *Theelol.* Theelol is another estrogenic substance which was isolated at about the same time by Doisy of St. Louis and Marrian of England.

c. *Emmenin.* A third estrogenic hormone known as Emmenin which is very similar to Theelol was isolated by Collip. Theelol differs from Emmenin in that Theelol is ether soluble and Emmenin is ether insoluble, suggesting some change in the structural formula differing from that of Theelol.

d. *Anterior Pituitary-Like Hormone.* Aschheim and Zondek in 1927 found a substance in pregnancy urine which they named Prolan and which was at first thought to be the anterior pituitary gonad stimulating hormone, but this has been disproved. A. P. L. is definitely not the gonadotropic hormone of the interior pituitary. A. P. L.

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*Read before The Annual Assembly of The Nebraska State Medical Association, April 27, 1938.

or Prolan is the substance that exists in the urine in pregnancy that is responsible for the production of the Aschheim-Zondek and Friedman tests for pregnancy.

So that there will be no confusion, I will briefly review the hormones that have to do with sex in the female. The anterior pituitary produces the follicle stimulating hormone and the luteinizing hormone. The ovary secretes the estrogenic hormone dihydrotheelin (Theelin) and Progesterone, the luteinizing hormone. The placenta supposedly secretes Theelin, Theelol, Emmenin and A. P. L.

THEELIN EXPERIMENTS

PHYSIOLOGY OF THEELIN IN THE HUMAN CASTRATE

The human female, female apes and Old World monkeys are the only animals that menstruate in the ordinary sense of the term.

Edgar Allen was able to produce menstruation in eight ovariectomized monkeys by the injection of follicular and placental extracts. Menstruation began within a few days after cessation of the hormonal injections. In these experiments, full premenstrual development of the endometrium was not obtained. He says: "Theelin alone of the ovarian hormones, seems sufficient to supply the essential mechanism of menstruation. Theelin produces the growth phase in the accessory genital organs. This includes accelerated growth of the vaginal epithelium, growth of the glands of the cervix and body of the uterus to the interval condition, probably some repair of ciliation of the tubes, and, toward the end of this interval, the initiation of growth in the mammary gland tree including the nipple."

Werner and Collier, St. Louis University, duplicated on the human female castrate the work of Edgar Allen on the monkey. They also were able to check on the symptoms complained of by castrates which could not be determined on the monkey. The following are the conclusions on the first experiment:

1. Theelin restores the breasts and genital tract of women to apparently the normal sexual state after previous castration atrophy.

2. Theelin produces changes in the atrophied endometrium of castrated women that approximate or equal the interval changes found in the normal women at the time of ovulation.

3. Theelin does not produce the pregravid changes in the endometrium of castrated women.

4. The bleeding from the uterus of castrated women induced by Theelin occurs from an endometrium approximating or equaling in development the interval changes found in the uterus of normal women.

5. Theelin induces bleeding from the uterus of castrated women qualitatively indistinguishable from menstruation in normal women.

6. This bleeding from the uterus of castrated women is accompanied by the subjective symptomatology usually experienced by normal women during menstruation.

7. Theelin relieves the subjective symptoms that occur in women fellowing castration.

8. Four ovariectomized women to whom large doses of Theelin were given state that "libido was markedly increased."

9. Excessive doses of Theelin were given to women intramuscularly over a period of from eighty-nine to ninety-three days without seeming discomfort, until a dosage of from 6 to 8 cc. daily was reached.

In a second experiment in which eight castrate girls were used, Werner and Collier duplicated the results obtained in the original experiment, besides finding that 2,800 rat units would initiate endometrial growth when the element of time is taken into consideration.

In a third experiment by Werner and co-workers in which sixteen castrate girls were administered theelin in oil in varying dosages, the following conclusions were determined:

1. Theelin in oil stimulates development of the sex-related structures of the human female, producing changes in the breasts, gross appearance of the vagina, with increased mucous secretion, and growth of the endometrium and vaginal mucosa in dosages as low as 5000 international units.

2. Definite changes in the vaginal smears were noted with dosages of theelin in oil as low as 10,000 international units. Vaginal smears would appear to be a less delicate index of theelin administration than uterine mucosal specimens. Relief of symptoms of castration was obtained with dosages as low as 5,000 international units, which is insufficient to produce the full follicular phase in the vaginal smears.

3. This experiment proves that dosages of 5,000 international units of theelin in oil, when the element of time is considered, will mitigate or relieve the symptoms of castration, but at the same time will stimulate development of the endometrium sufficiently to cause uterine bleeding when discontinued.

4. Theelin in oil is much more effective than theelin in aqeous solution. When administered intramuscularly in the human being, smaller dosages and less frequent intervals of injection produce more rapid and more marked effect on the endometrium and vaginal mucosa.

5. The evidence seems conclusive that the large dosages of theelin advocated by some (from 30,000 to 50,000 rat units) as necessary to produce the interval phase of the endometrium are grossly excessive.

MENOPAUSE

The term menopause, literally meaning cessation of menstrual (monthly) flow, is commonly used to designate that critical period in a woman's life more correctly spoken of as the climacteric. Menstrual pause may occur at any time during the menacme from various causes. The menopause is more than a pause or cessation of menstrual flow. This is only one of the phenomena which occur at this time. It is the one sign which is objective and therefore attracts most attention. It indicates that the woman is having endocrine imbalance.

The pathogenetic mechanism of menapausal symptomatology is not limited to insufficiency of the ovaries but is the result of a complex endocrine crisis which varies in different individuals. In this crisis the predominating feature is gonadal insufficiency but other glandular disturbances occur subsequently and form an essential part of the complex. Because of the major importance of the gonads in the endocrine system during active sexual life, insufficiency or cessation of function frequently causes imbalance in other interrelated glands such as the anterior pituitary, at times the posterior pituitary, the thyroid and the adrenals.

With this disturbance of function in the ovaries and other interrelated glands we have a secondary disturbance of the delicate equilibrium existing between the two divisions of the autonomic nervous system with the production of the subjective symptoms described. In other words, most of these symptoms are the result of autonomic nervous system instability secondary to glandular inbalance.

Symptoms Complained of by Castrates and Women Having Ovarian Hypofunction, Menopause and Involutional Melancholia. Based Upon a Study of 197 Cases

(53 Castrates, 96 Menopause, 48 Involutional Melancholia)

Order of Frequency of Symptoms	Per Cent
1. Menstrual Disturbances	99.2
2. Nervousness, subjective	97.6
3. Hot flushes	89.0
4. Excitability	85.7
5. Fatigability and lassitude	83.7
6. Depression and crying	77.4
7. Constipation	76.2
8. Irritability	75.1
9. Tachycardia, palpitation and dyspnea	68.8
10. Vertigo	67.4
11. Decreased memory and concentration	66.8
12. Sleep disturbed	66.1
13. Amenorrhea	57.6
14. Headaches	56.4
15. Psychosis	52.2
16. Occipitocervical aching	50.6
17. Scotomata	49.4
18. Numbness and tingling	48.3
19. Cold hands and feet	35.3
20. Formication	25.4
21. Vague pains (recorded for involutional melancholia)	77.1

It is the belief of Werner and his associates that they have secured sufficient evidence by controlled clinical research to justify their conclusion that involuntional melancholia is only the exaggerated stage of the menopausal syndrome. In an article published in the Journal of the American Medical Association, July 7, 1934, and in a second article in the Archives for Neurology and Psychiatry, May, 1936, they give proof of the etiology and treatment of involutional melancholia.

TREATMENT

The treatment for relief of the syndrome, characteristic of castration, ovarian hypofunction, menopause and involutional melancholia is estrogenic hormones. Any of the standard preparations of estrogenic hormones which have been accepted by the Council of the American Medical Association may be used to relieve these symptoms.

One thousand or two thousand international units of estrogenic hormone may be injected three times a week into the upper third of the gluteal muscle, alternating sides each time. A small strip of adhesive, 1 by 1 inch should be placed over the injection site immediately, for oil solutions may leak if this is not done. In severe cases, such as involutional melancholia, it may be necessary to inject two thousand international units estrogenic hormone daily during the first month. Then revert to injections every other day. With improvement in many of these conditions after the first month or two, treatment should be continued for from three to six months.

The only criterion as to whether the patient has attained the glandular adjustment characteristic for the post-menopausal period is to discontinue treatment, and if the symptoms do not return, the patient is well. If the symptoms do return, then treatment must be reinstituted for from one to two or three months, again depending on the severity of the symptoms.

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Hospital Insurance

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Lincoln has had some experience with Hospital Insurance and probably will have more. Hospital insurance for school teachers and their children has been proposed by a group in Omaha and has been submitted to the State Insurance Department for consideration. A limited and preferred class of hospital insurance appears to be working fairly satisfactorily in some communities. But there is a vast difference between providing insurance for a selected class of risks and for an unselected class of risks. All the hospital insurance schemes for general hospitalization that I have had an opportunity to study showed a preponderance of evidence to support the conclusion that the wish had been the father of the scheme while the fact that any hospital insurance, if it is to fulfill the requirements, must rest upon a foundation which is more secure than wishes, had been ignored.

Section 44-101 compiled statutes of Nebraska defines insurance as follows: "Insurance is a contract whereby one party called the insurer; for a consideration undertakes to pay money or its equivalent, or to do an act valuable to another party called the insured or to his beneficiary upon the happening of the hazard or peril insured against whereby the party insured or his beneficiary suffers loss or injury."

In the last analysis Hospital Insurance to be of any remedial value must be safe and to be safe:

The hazard insured against must not reach simultaneously any large percentage of the group insured.

The insured must not be in a position to create the liability.

It must be possible to definitely determine whether the contingency insured against has happened.

There must be an experience table definite enough to furnish the basis for reserves and the reserves must be established ahead of the time of distribution.

There must be adequate assurance of payment to create reserves.

In my opinion the only safe and practical hospital insurance is insurance supplied by an insurance company which has an efficient sales agency, claims department, legal department and which contracts with a hospital for a definite amount of service for which it is liable for payment and is financially able to pay.

Many impractical schemes have been proposed in which a hospital, or a group of hospitals are to contract with individuals or are to contract with a third party who proposes to secure contracts with individuals, the insured, for hospital insurance and the hospital proposes to furnish the service provided in the contract, and to receive payment from the third party for the services, if payment is available and if not available, to absorb the loss. Some of these plans are worded one way and some are worded another, but in all that I have studied, the ultimate result is the same.

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*Deceased.

There are certain fundamental elements which should be considered by the insured before he purchases hospital insurance which are:

The insured should have reasonably certain assurance that he will receive the benefits for which he pays or agrees to pay.

He should have reasonably certain knowledge of what those benefits are to be or will be.

He should be reasonably certain that he will not be financially liable for debts created by the insurer.

He should have reasonably certain knowledge that his choice of hospital or physician for treatment shall not be impaired by the contract he enters into with the insurer.

He should be reasonably certain that his contract will not be cancelled except for non payment of premium.

There are certain fundamental elements to be considered by hospitals entering into a hospital insurance contract, which are:

When a hospital enters into a contract to furnish hospital service the hospital should have reasonably certain knowledge of what the contract medically and legally provides.

That the contract to furnish hospitalization does not impair the autonomy of the hospital.

That the contract has definite and reasonably certain enforceable provisions, covering the period of time of hospital service and the limitations of the hospital service the insured is to receive and payment for the same.

That provision is made for the disposition of an unwell patient, in the hospital, if and when the period for which hospital service, as provided for in the contract, expires.

What charges shall be made to the patient, if he remains in the hospital, after the period as provided in the insurance contract for hospital service has expired.

What if any provisions have been made to prevent a cause of action against the hospital by a claim for breach of contract by the insured.

What if any provisions have been made to prevent a cause of action against the hospital, by a physician, if the hospital should refuse him the privilege of treating an insured patient in the said hospital.

That reasonably certain provisions have been made pertaining to treatments, medical and surgical, which may be admissible or prohibited by the hospital.

That failure to provide services not included in the contract which are necessary for accurate diagnosis and efficient treatment of the patient will not be construed as breach of contract.

A charitable hospital is not liable for negligence but it is liable for breach of contract.

That some provision is made for the purpose of determining necessary treatment.

Legally neither a hospital nor an insurance company is permitted to treat patients or otherwise practice medicine, or employ others to do so and this includes employment of intern physicians as well as non-intern physicians for such purpose. How would the treatment of a patient who declines to leave the hospital, after being dismissed by his attending physician, be carried out?

If the insured patient were not financially able or was unwilling to pay for services which were necessary and which were additional to the services provided by the insurance contract, whether or not a separate contract with the patient when he entered the hospital, to pay for such services he might require other than those provided for in his contract, could be made that would protect the hospital financially and legally.

Whether or not, if a hospital entered into a contract with an individual or group of individuals to furnish hospitalization at some future date upon payment of a definite sum of money by the individual or group of individuals, such agreement or contract would be legally construed as insurance.

Whether or not if a hospital legally incorporated for the purpose of treatment of the sick under the directions of physicians, which is the generally accepted purpose of a hospital, should engage in an insurance business would be required to amend its articles of incorporation.

Whether a hospital engaging in an insurance business would be subject to regulation under insurance law or hospital law. Whether the underwriting of hospital insurance by a hospital would be construed as engaging in an insurance business.

Whether or not a hospital which has a non-profit, non-taxable status and not liable for negligence would jeopardize if not actually surrender a part or all of such status if it engaged in an insurance business.

There are certain fundamental elements to be considered by both insurance carriers and hospital entering into a hospital insurance contract, which are:

Definite provisions for the purpose of ascertaining whether or not the insured patient applying for or receiving hospitalization has not himself created the liability and/or if he requires the services.

A reasonably certain determination of what constitutes the hospital service, what is embraced in the terms: "room service," "operating room service," "anesthetics," "anesthetist," "laboratory service," "medicine," "appliances," "nursing."

A reasonably certain determination of what diseases are insured and what diseases are not insured.

A reasonably certain determination of what constitutes excluded diseases such as mental disease, nervous disease, tuberculosis, cancer, syphilis, gonorrhea and communicable disease, and what means shall be used for the determination of these diseases and when the determination is to be made.

A definite provision for determination of what constitutes obstetrical service for mother and baby.

How a controversy in a diagnosis between physicians shall be adjudicated.

How a controversy arising between the hospital and insured patient pertaining to services rendered by the hospital, or whether the contract has been breached by either party shall be adjudicated.

A definite provision for the purpose of equalizing any hospital benefits the insured patient receives from Workmen's Compensation or from any other insurance carriers.

A definite provision for a procedure for the investigation of the records, medical or hospital reports, receivable upon request and payment for the same, and for physical and laboratory examination by insurance carrier or its agents of any insured patient.

The preservation of all records pertaining to an insured patient. The procedure to be used for post mortem examination and report of a deceased insured patient.

Provision for special and periodical reports of hospital services for insured patients.

Definite provisions pertaining to waivers of privileged communications.

In the event of an action by the insured patient against the hospital which grew out of the services provided by the hospital contract to what, if any, extent the insurance carrier would be made a party in interest.

If an insured patient was in a hospital, and required a surgical operation and his choice of a surgeon to treat him was one that was not an accredited surgeon in the hospital in which he was hospitalized, what if any cause of action for breach of contract would the policy holder have against such hospital or insurance carrier?

What if any cause of action would a physician have against a hospital or insurance carrier if he were excluded from the list of accredited physicians selected to treat an insured policy holder of hospital insurance.

These are just a few of the many questions which arise when hospital insurance is considered and which if there were no others should cause any hospital contemplating an invasion into the complexities of hospital insurance to give the matter careful consideration.

The dispersion of the financial impact produced by the cost of hospitalization is recognized as desirable for hospitals and patients. What if any financial benefit hospital insurance would be to doctors and private duty nurses is highly speculative.

There has been more or less loose talk about government hospitalization supplementing private hospitalization which is more fancied than real. The cost of government hospitalization and the ultimate prevailing of common sense will prevent the expansion of government into the field of general hospitalization to any material extent. There may be some likelihood that the government may become an insurer for a class of patients, in which event, the relationship between the hospital and the government, as an insurer, would be the same as between a hospital and an insurance company. In both instances the hospital need not surrender its autonomy which is a basic attribute of individualism. Nor should such insurance effect the autonomy of medicine.

It is often said "fools rush in where angels fear to tread." Insurance companies with years of experience and presumably special knowledge in the field of insurance have given hospital insurance study and consideration. Obviously these insurance companies have at their command the machinery to put in force this type of insurance if and when it becomes practical, feasible and safe to do so, and it is reasonable to presume will avail themselves of the opportunity to supply this form of insurance when and if it can be done on a sound actuarial basis.

In my opinion, and basing my opinion on an observation of over thirty years in the practice of medicine, there are no short cuts or cheap means of supplying the modern demands for hospitalization and medical service. Either the demands now being made must be decreased or inadequate payment for the services demanded accepted, if the cost of hospitalization and medical service is to be reduced to any appreciable degree. Medical and hospital service is the product of individual effort and the best that can be secured is none too good. Neither hospitals nor doctors have grades of service to offer, both have only one standard which is the best they individually are capable of giving.

The present turbulent unsettled stream of human progress has temporarily undermined many rational foundations but "this too will pass" and in time the stream will be returned to its natural boundaries, human effort will clear the wreckage, the law of adaptation will become effective, and many of the synthetic remedies now being proposed, quite generally unsuccessfully, will have been relegated to the closet of unmentioned follies. But the spirit of medicine will survive as it has always survived upheavals in the past.

The Specificity of Methods for Determining the Concentration of Ethyl Alcohol in Body Fluids With Specific Reference to the Heise Method

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PART I

The Present Status of the Question of the Relations Between the Concentration of Alcohol in the Body and That of the Blood and Urine

A voluminous amount of work has been published concerning the alcohol content of the blood, breath, spinal fluid, urine, and saliva and their correlation with clinical symptoms together with a legion of laboratory methods for their determination.

The amount of material is so great it would be impossible to include all of it in a paper such as this and besides, facts have been so thoroughly established that there is no need to go into thorough detail. For those interested, a comprehensive bibliography is included at the end of this paper. However, a brief summary of established facts is given here as being necessary for the understanding of what follows.

1. Alcohol introduced into the human body by whatever route quickly diffuses throughout the whole body in proportion to the water content of the various parts.

2. Absorption is usually complete within about one hour and alcohol appears in the urine within three minutes. It reaches a maximum concentration in the blood in about one and one-half hours after ingestion, then slowly declines. It has usually completely disappeared from the body within twenty-four hours, although traces have been found around the spinal cord for as long as several days.

3. Food, especially such food as bread and milk, causes a lower concentration in the blood, while alcohol taken on an empty stomach results in a higher concentration. Alcohol taken on an empty stomach also causes the maximum concentration to be reached more quickly. As a rule, the larger the body for a given amount of alcohol, the lower the concentration in the blood, but not always.

4. The concentration of alcohol in the blood is the best guide that we have to that in the brain.

5. For a given concentration on the blood, there is a perfectly definite syndrome of intoxication and the relation is so constant, that, knowing the laboratory result, one can draw up a symptom picture that fits actual observation very closely and conversely, observing a subject, one can predict the laboratory results also very closely. This has been so repeatedly verified in hundreds of actual arrests for driving while intoxicated that there is no question of its practical truth. Bogen found this to hold true in over 500 cases. Recently,

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Schwarz(3) in Berlin published a series of over 1,000 cases in which there was a very close correlation between the concentration of alcohol in the blood and urine and observed symptoms.

6. A frequent objection by antagonists of these tests is the well known fact that chronic drinkers do not get as intoxicated on a given quantity of alcohol as do non-drinkers. This argument is frequently brought up in court by the defense in an attempt to show that the accused is not influenced by alcohol—that he can take it straight and go about his work. The answer to this is the following: Tissues are always affected to about the same degree by the same concentration of alcohol in the blood, irrespective of previous habituation or the amount taken. This means, that given two persons with the same concentration of alcohol in their blood as shown by tests, they will appear (and are) equally intoxicated. The amount of alcohol taken is of no importance whatsoever—it is the amount found in the blood. The amount in the blood determines the amount that would be found in the brain and hence the degree of intoxication.

7. The rate of drinking affects the concentration of alcohol in the body. That is, as a rule, the faster a given quantity is drunk, the higher the concentration in the blood and the quicker this concentration is reached. The dilution of the alcohol also has an effect—the more concentrated the drink (as to alcohol content) the higher the content in the body for a given amount. That is, if two solutions, each containing the same amount of alcohol are drunk at different times, one diluted and the other concentrated, the more concentrated will produce a higher concentration in the body and a greater degree of intoxication.

8. Testing the blood or urine constitutes the best method there is to rule out symptoms similar to alcoholic intoxication but due to other causes. Manifestly a person with a concealed fracture of the skull with symptoms like those of intoxication is not drunk if the blood or urine shows no alcohol.

9. Symptoms do not always agree as to quality but do as to intensity with the same concentration of alcohol in the blood. Symptoms are due to interplay of character, emotional make-up, psychological factors, etc. with the effects of alcohol itself. Hence, one person may be maudlin, another bellicose, another morose and silent, and still another hilarious, depending on his normal psychological and emotional state while drinking.

10. If tests are made within 2 to 6 hours of ingestion and the percentage multiplied by the body weight of fluid, the result equals the least amount taken. It may or may not show all that was taken, but it does show the person could not have taken less than that amount.

11. Drunkenness and intoxication are not synonymous. This is becoming recognized by both the medical and legal professions. A person drunk is intoxicated, but a person may be intoxicated without being drunk.

Experiments without number have shown conclusively that with concentrations as low as 0.03% there is a definite impairment in the fine degree of coordination and muscular response needed in driving a car. One of the most serious effects is the impairment in the ability of the brain to respond to the rapid change in the visual field encountered in driving a car. Cavett found that with a concentration of 0.05% in the blood the reactions time was slowed 7%; with 0.08%, 12%; with 0.1%, 19%. These agree with the results of Heise, where he found about 20% slowing in reaction time with a concentration of 0.1%. At low concentrations, below 0.1%, there is a loss in self criticism and the power to estimate risks—the driver is always convinced that he is driving much better than he really is. All in all, it is the person who has such a low concentration in his blood that is the most dangerous, for he appears normal by ordinary observation, yet is absolutely unfit to drive a car. However, the United States is slow to recognize this fact so well known and acted upon in Great Britain, Sweden and Germany. The tendency in this country is to give too much latitude in favor of the accused. The Committee on Tests for Intoxication of the National Safety Council has adopted the figures reached by a committee of the American Medical Association of 0.13% for the blood and 0.15% for the urine as the dividing line. This figure is sure to be lowered as the courts become more familiar with the facts.

12. Sometimes a puzzling instance will arise when the laboratory reports a high figure for the blood and urine on a person involved in a serious accident where someone has been seriously injured or killed, yet he appeared cold sober, could walk and talk normally, and the only indication of alcohol being involved was the odor on the breath. The explanation of this apparent paradox is the well known sobering effect of a shock or serious emotional up-set. Strong stimulants such as coffee will also temporarily sober a person. But invariably when the effects of the shock, fright or stimulant wear off, the effect of the alcohol again manifests itself and the person again shows the symptoms of intoxication. This can be proved by observing the person after a sufficient lapse of time.

13. The concentration of alcohol in the blood closely parallels that of the urine. An average ratio of 1 part in the blood to 1.35 parts in the urine was found by Southgate and Carter and confirmed by many others. We have found this to be true also. Arguments are advanced against test on the urine in that such tests give the average of all concentrations present in the bladder since the previous voiding and not the actual concentration in the blood as reflected in the urine at the time of voiding. This is true, but it is a negative error and works in the favor of the test against the accused and not for him as so many lawyers have thought they were proving. The reason is this: In the kidneys, the urine forming in the tubules represents the actual concentration of alcohol in the arterial blood of the kidneys at any instant. The highest concentration in the bladder urine will be that at the highest concentration in the blood. As the blood concentration declines, the amount transferred to the urine in the kidney declines also, resulting in a progressively greater dilution of the alcohol in the bladder. The results from a full bladder does give an average of all concentrations it is true, but this average is not higher than the actual concentration present in the arterial blood at some time over the course of collection of urine in the bladder. Practically, this has no effect on the practical value of the test on the urine, for it is well known that alcohol acts as a diuretic, resulting in frequent desire to empty the bladder, so in practical police work it is rare to run across a person with a bladder in which the urine has been collecting over a number of hours. It may be full, but this volume will usually have been collected over a short period of time due to diuresis—this is especially true in the case of beer. It is evident, then, that arguments in court as to the inaccuracy of tests made on the urine because the elapse of time since the last voiding are, for practical purposes, inconsequential. The evidence of thousands of agreements within the 1 to 1.35 ratio of blood to urine points to the practical value of such tests.

14. The blood of normal persons contains a small amount of oxidizable substance which is probably ethyl alcohol of endogenous origin. This amounts from 0.002 to 0.003%, hence is of no practical importance.

15. Tests as they are made by the methods of Widmark, Nicloux, Harger, Heise, Soltau, Bogen, Muehlberger, and Gettler are absolutely specific, in practical use, for ethyl alcohol. Part three of this paper will deal more fully with this question and proof will be advanced for what seems at first sight to be somewhat of a dogmatic statement.

PART II

THE HEISE METHOD

A brief description of the Heise colorimeteric method will be given because we believe that from the standpoint of accuracy and simplicity it is the one best adopted to the average physician who wishes to make the tests for himself. Those interested in other methods are referred to the papers of Harger(3), Soltau(21), Muehlberger(20), Sheftel(29) and Abels(32).

In the Heise method two sets of standards are made use of—one for the urine and the other for the blood. In the urine series, concentrations of alcohol run from 0 to 0.23% by weight and in the blood series, from 0 to 0.04%. The preparation and preservation of these standards is too difficult for the average physician and since they may be purchased from the LaMotte company at a cost of about $15.00, is not very practical.

10.0 c.c. of the urine specimen is distilled with 10 c.c. of a picric acid-tartaric acid reagent and exactly 10.0 c.c. of the distillate collected. We use 10 c.c. volumeteric flasks for this purpose. 2.0 c.c. of blood are pipetted into 15 c.c. of the same picric acid reagent and distilled as before, collecting exactly 10.0 c.c. Distillation must be careful at first due to a tendency of the mixture to foam badly. A 500 c.c. Ehrlenmeyer flask should be used for both distillations.

Dilutions of this distillate will usually have to be made, as in usual intoxications, one c.c. of the distillate contains too much alcohol for the amount of dichromate used and a complete reduction occurs making matching impossible. Dilutions of 0.6 c.c. of distillate to 0.4 c.c. of water, or 0.4 c.c. distillate and 0.6 c.c. of water may be used. Usually the first will suffice as it covers the stages of stimulation to confusion which are the rule in average arrests for intoxication and driving. The principle is that whatever fraction of one c.c. is used, enough water must be added to make exactly 1.0 c.c.

3.0 c.c. of N/15 potassium dichromate in 50% sulfuric acid are added to each urine distillate tube and the tubes placed in boiling water for four minutes.

In the case of the blood distillate, 2.0 c.c. is the unit amount and fractions of this are used, e.g. 1.5 c.c. (0.75), 1.0 c.c. (0.5), and 0.5 c.c. (0.25), water being added in each case to make 2.0 c.c. To each tube is now added 1.0 c.c. of the dichromate solution and the tubes placed in boiling water for twelve minutes. Each tube is now matched in a comparator block with the standard tubes. The result in the case of the urine is divided by the dilution used, giving the amount of alcohol in per cent by weight. In the case of the blood, the figure on the standard tube which the unknown matches is divided by the dilution and multiplied by five, giving the result in per cent by weight as before, per c.c. of blood.

The test itself is relatively simple and can be done by the average physician if the reagents are made up for him by a chemist. The reagents used are N/15 potassium dichromate made by dissolving 3.270 grams reagent quality potassium dichromate in 50% sulfuric acid (reagent grade diluted half and half with distilled water) and diluting to one liter with more 50% acid. Picric acid reagent—half saturated solution (6.1 grams per liter) of picric acid with 10% tartaric acid.

All test apparatus must be scrupulously cleaned with dichromate cleaning solution each time used and rinsed in redistilled water. The highest purity distilled water must be used in making the reagents.

PART III

THE SPECIFICITY OF THE TESTS FOR ETHYL ALCOHOL

In a recent article, Dr. B. Carl Russum(1), in evaluating present day methods of chemical tests on the urine and blood, comes to the conclusion that "the alcoholic content . . . of urine, blood, or expired air are unreliable guides in the diagnosis of acute alcoholism."

This view was also expressed by Gettler and Freireich(2) in 1931. Later work by various workers in the field(3) have shown this opinion to be in error. In a later work by the same authors(4) data were presented which were in exact contradiction to those in their earlier work.

Russum, citing Smith and Stewart(6), says that his (Russum's) work lead to the same conclusion, i.e., "that the use of arbitrary figures for the alcohol content of the urine to indicate drunkenness is very fallacious, because of the variable excretion of alcohol in the urine." Further, Russum says, "they cite a case where a very drunk man excreted less than 0.02% given by Bogen as indicating drunkenness, while in other cases they state the amount was over that figure with no signs of drunkenness." Evidently a typographical error entered here. The figure as given in their article reads 0.2% or 2.0 mg. per c.c. of urine as does also Bogen's original article.

In reference to the first example, even with the figure corrected, we are pretty skeptical and are willing to back our skepticism, that any obviously intoxicated person can be shown to our satisfaction to be so drunk "as to be semi-comatose" (quoting Smith) and not show a figure for the blood alcohol even higher than 0.2%. Smith stated that in the case of the second example where the figure was over 0.2% with no signs of drunkenness, the person drank 250 c.c. of whiskey and was an utter abstainer, a statement which in our experience seems well nigh incredible.

The work of Harger(3), Bogen(3), Schwarz(3), Heise(7), Bogen(8), Hall(9), Haggard and Greenberg(10), to mention only a few, has conclusively proved that there is a close relation between observable behavior (or symptoms) and the concentration of alcohol in the blood and urine. Numerous other workers have confirmed their findings.

We, in some 100 cases, have found only three that did not agree in observation with the laboratory report and these three will be taken up in detail in a later paper. As a rule, we found a definite state of intoxication was present with a concentration of 0.2% of alcohol in the blood, which agrees with the experience of other workers. As to the argument about the fallacy of urine analysis due to the result being the average of various concentrations over a period of time from the last voiding, we can only point out that the fallacy, if there is any, can only work to fix the figure at a conservative point—never to make it higher than the condition of the person would indicate.

Russum cites an instance where, following a railroad-automobile accident, one of the train crew was suspected of drinking on the evidence of an alcohol odor present in the cab. A chemist reported 0.2% alcohol in his urine. Their examination of the blood and urine collected soon afterwards revealed no alcohol in either. Russum stated the odor was due to hydrogen sulfide caused by belching after taking a "certain well known proprietary oil sold in capsules." When his associate, Dr. T. McCurdy, took some of this medicine, he claimed he was able to secure a reaction in his urine similar to the one usually given by alcohol. Russum concluded that this illustrates the fallacy of drawing conclusions that positive reactions with the urine should always be attributed to alcohol.

Let us examine the facts, in the example he cites.

1. The "certain well known proprietary oil sold in capsules" was Haarlem Oil, a mixture of olive oil, sulfur and turpentine. Each capsule weighs about 0.4 gm.

2. The odor from belching on taking this compound is characteristic of this mixture—it is the same on the breath of anyone—and is not due to hydrogen sulfide, nor has it the remotest resemblance to that substance or to alcohol. The odor is that that one used to observe from old fashioned sulfur matches and can be produced even now by wetting a match and rubbing it in the palm of the hand. It is distinctly a sulfurous odor.

3. Three of us (one of the authors—D. B.) and two members of the Lincoln police department, took this remedy, one capsule each in the case of the other two, and an overdose of two capsules in my own case. The odor was characteristic and in the case of one of us who chewed it up instead of swallowing it whole, it was very strong on the breath. No one would agree that there was the

slightest chance of mistaking such an odor for alcohol.

4. One and one-half hours afterwards, the urine of none of us showed the slightest reaction whatsoever by the Heise method.

5. A capsule was added directly to 10 c.c. of urine, warmed gently until dissolved and then distilled. There was a strong odor of turpentine to the distillate and tiny drops of turpentine were observable on the surface of the distillate. Naturally, if drops of this oil were allowed to get in the pipette, a positive result would occur, but one must remember that human beings do not excrete immiscible oils in their urine as a rule. Hence, the water part of the distillate, containing all of the turpentine that was soluble in the distillate, was the part tested with no reaction.

The impossibility of obtaining a positive reaction, unless the test was made directly on the urine—a procedure not done in any known method and which would naturally give a positive reaction on any urine due to dissolved organic substances which make up a large proportion of the solids of the urine—can be simply shown by a few figures. Let us assume a man weighing 150 pounds takes one capsule weighing 0.4 grams. Of this 150 pounds, 100 is water. This equals 45,300 grams. Assuming complete solubility for the capsule (which is by no means the case) this would give 0.4/45,300 or 0.000009 gms. or 0.009 mgs. per c.c. of body fluid. This would be the concentration in the urine, a figure one thousand times less than the lowest significant alcohol figure (1 mg.). Actually, the concentration in the urine would be many times less than this because, for practical purposes, turpentine is insoluble in water. The traces soluble in water are too small to measure by any means known. This can be said for olive oil also.

In order to follow up this often raised question that other substances than ethyl alcohol can give positive results with these test analogous to the claims Russum makes in this instance, the following experiments were performed.

Since the substances most commonly proposed as giving falsely positive results with these tests are the aromatic oils used for flavoring drinks such as oil of cloves, lemon, cardamon, thyme, etc., or the aromatic esters, alcohols, ethers, ketone or aldehydes responsible for the pleasant taste or odor they possess, such as eugenol, ethyl acetate, amyl acetate, anisol, and terpinol, a group composed of representative members of the above classes of compounds was selected.

40 c.c. of water was placed in a series of flasks and enough of the substance was added to saturate it at room temperature. The following substances were used: Turpentine, oil of cloves, oil of eucalyptus, oil of lemon, oil of anise, oil of wintergreen (methyl salicylate), thymol, camphor, menthol, ethyl cinnamate, ethyl acetate, n-butyl alcohol, chloral hydrate, chloroform, ether, and terpene hydrate.

Positive results occurred in the following (by positive, a reaction strong enough to occur with one c.c. of the undiluted distillate is meant): n-butyl alcohol, ether, and chloral hydrate.

Now, let us examine these three substances and show why, although chemically possible as false positives, are clinically impossible. N-butyl alcohol is three times as toxic as ethyl alcohol. This holds true for other liquid alcohols. It is a well known fact that as we increase the number of carbon atoms in alcohols, we increase their toxicity. For example, according to McGuigan(11), the relative toxicity is, methyl 0.66; ethyl 1.00; propyl 2.00; butyl 3.00; and amyl 10.00. Ether is not excreted in the urine. It is wholly excreted by the lungs and not oxidized. Chloral hydrate is usually fatal in a five gram dose and a smaller dose produces a deep sleep. A solution equivalent to a concentration of 0.1% or 1 mg. per c.c. of body fluid for a man of 150 pounds would be about 45 grams, hence the utter impossibility ot chloral hydrate.

If one applies the criteria of chemical possibility, clinical possibility, and practical possibility, one may easily prove that in the practical use of the test, no substance but ethyl alcohol will be found in the distillate in sufficient quantities to give any significant result.

1. Chemical

a. No organic substance whose solubility in water is less than 1 mg. per c.c. can occur in the urine in any greater concentration than that.

b. No water soluble solid, unless it is steam volatile (as chloral hydrate) can appear in the distillate.

The vast majority of organic compounds, solids or liquids, have very low solubilities in water. A larger proportion have solubilities less than 1 mg. per c.c. As a rule, the more complex the structure and the greater the number of carbon atoms composing an organic compound, the lower its solubility. Taking the alcohols for an example, the first 10 are water soluble liquids. Their solubility decreases as the number of carbon atoms increases. Above the tenth (decanol) they are solid, wax-like substances, insoluble in water.

2. Clinical

All clinically possible substances are, weight for weight, more toxic than ethyl alcohol, with the exception of acetone. Hence, although they may be found in the blood or urine of a person dead from an overdose of one of them they will not be found in significant amounts in those fluids in a person arrested while driving an automobile.

3. Practical

Can the substance be taken in such a quantity that it will produce a concentration of 1 mg. per c.c. of urine with no more toxic symptoms than a like amount of ethyl alcohol and is there a possibility of it being taken as a food, a drink, or medicine?

A moment's thought will convince one that any substance he may think of will not be taken by any sane minded person in sufficient amounts and then he be found driving a car. Some of the substances excluded clinically will also fall under this heading, for the obvious reason that we are dealing with persons arrested while driving a car and most of these substances are so toxic that critical symptoms of serious poisoning appear long before the significant concentration of 1 mg. per c.c. occurs in the urine or blood, thus automatically stopping any further increase by stopping the intake, unless taken at one dose with the deliberate intention of suicide. We must emphasize again that we are dealing with persons driving a car, not with persons on the verge of death in a hospital bed. The one exception to the above is acetone.

Acetone shares the same peculiarity in relation to the human body that ethyl alcohol does. That is, it is infinitely soluble in water, is relatively non-toxic, is excreted by the kidneys, and is distillable with water.

According to Purvis-Stewart(12), the normal level of acetone in the blood in health is about 1 mg. per 100 c.c. A concentration of 30 to 50 mg. per 100 c.c. is highly dangerous to life. Survival is rare with a concentration of 35 mg. per 100 c.c. In actual practice, therefore, a person would have to be comatose before reaching a significant concentration of acetone in the blood to give a false positive result.

Hence, although acetone is chemically and clinically possible, practically it is so highly improbable that it amounts to a virtual impossiblity.

In order to test this point, tests were run on fifteen, four plus acetone positive urine specimens from cases of postoperative ketosis. None of them showed the slightest reaction with the largest amount of distillate used in the test—one c.c. The distillates were all four plus positive for acetone.

Heise(7), in a series of similar experiments, found no practical fallacies in any of the substances he tested.

Summing up, we believe a careful consideration of the foregoing will justify our contention that the tests are specific for ethyl alcohol. As to the breath, Harger(3) found no substance but ethyl alcohol would give a positive result in a normal person. Chemically, the same principles for the urine and blood hold true for the breath.

We therefore say, that no substance with the exception of acetone, can be proved to our satisfaction to be present in the urine or blood of a living individual that is distillable and recoverable in the distillate in quantities sufficient to give a result that is legally significant.

CONCLUSION

1. A brief review of the medical and laboratory aspects of the subject has been given.

2. The specificity of the tests has been pointed out and substantiated by laboratory proof.

(Bibliography in Reprints)

CLEAN TEETH DECAY; DIET ANOTHER FACTOR

That a tube or can of dentrifice is no insurance policy against dental decay is revealed in Dr. F. F. Smith's article entitled "Why Do Teeth Decay?" appearing in the April issue of *Hygeia*.

It has become increasingly clear that clean teeth may decay, all mottoes to the contrary. The theory of germ action has not offered a complete solution. It was noticed, for example, that some people who took no care whatever of their teeth and whose mouths were in a filthy condition had no cavities. Again, certain surfaces of teeth almost never decayed, and still more surprising was the fact that decay sometimes came to a complete stop.

Instead, certain elements in our diet have been found to be responsible for the proper growth of teeth and their resistance to decay. Calcium and phosphorus are the elements from which teeth are made, and the diet must include these foods for their best welfare.

Among these foods are milk, fresh fruits and vegetables, especially green leafy vegetables, dairy products, such as butter and cheese, eggs, lean meat and cod liver oil. Strictly speaking, cod liver oil is not a food, but it is included because of its vitamins.

It must not be assumed that a perfect method of preventing dental decay can now be claimed. So far it has been possible only to demonstrate two important factors in the solution of the problem: oral hygiene and proper diet. There may be other factors as yet undiscovered.

Nor may it be assumed that people may now stop brushing their teeth; neither can they expect that, by eating foods high in calcium and phosphorus value, they can always control their teeth, once decay has set in.

Further Standardization After Experience With the Injection Treatment of Hernia*

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It is common knowledge that the injection treatment of hernia has been used more or less successfully for the past hundred years. Until recently its use was limited almost entirely, however, to non-medical men or to irregularly licensed physicians. Finally this subject has been scientifically investigated by men of unquestionable professional standing and they have reported that it has merit. In spite of their standardization and approval we hear repercussions which would tend to discredit the method. This state of affairs leads only to confusion instead of directing us along its successful application.

There can be no doubt in the light of present results that the injection method will continue to be used. If the qualified surgeon refuses to recognize its merits and limitations, then it will again be relegated to the quack. We are challenged and the responsibility is ours. It is our responsibility to further standardize the proper selection of cases so that few failures in treatment need result. The medical profession has not whole-heartedly accepted the method for the reason that too many recurrences have followed its use. A high percentage of recurrences will always occur when cases are accepted for treatment at random. On the other hand, when a careful and proper selection of cases is made, cures will result consistently with few or no recurrences.

After several years of experience with the injection method we have learned that reports of early investigators have been too optimistic They were too liberal in their enunciation of indications for treatment and too limited in contra-indications. The variation in statistics of from 8 to 98 per cent is too great since all seem to use the same yard-stick in determining types of cases which are amenable to treatment by this method.

The great majority of opponents to the injection method are those who have had very limited experience with it or those who have not carefully selected cases for treatment. Most of its proponents have not been effusive in their claims for the reason that they have been too liberal in selection of cases with recurrences proportionately. No case of hernia should be accepted for injection treatment by any physician where there is a "reasonable doubt" that a cure will ensue excepting, of course, those cases where partial or temporary closure of the canal will improve the patient's general health and when surgery is contra-indicated.

Fool-proof standardization is necessary. To accomplish this, certain concepts of modern injection treatment of hernia are in need of revision. This especially embraces indications and contra-indications in the selection of cases to be treated. According to the literature the indications are numerous and liberal, and approaching the subject with this attitude, many failures have resulted in cases which were not adaptable to treatment. In the last analysis there are only five cardinal indications for injection treatment, as follows:

1. All early fully reducible indirect inguinal hernias before protrusion through the external ring occurs (three to six months standing).

2. All indirect inguinal hernias, regardless of age or size, which have very narrow canals, which have a tendency to strangulate and which completely reduce. Differentiation of this type of hernia from others is accomplished by the following simple manoeuver. Place the patient on a table on his back and reduce the hernia; then, holding the hernia reduced by pressure over the internal ring ask him to rise to his feet. When pressure over the internal ring is released one of two things will happen. (a) The hernia will remain reduced for an indefinite period, then slowly and intermittently it courses its way down the canal, or (b) It will fairly fall into the scrotum. The former behavior indicates injection treatment; the latter does not.

3. All fully reducible small umbilical hernias are amenable to injection treatment (where the defect is less than 1 cm. in diameter).

4. Small fully reducible direct inguinal hernias (where the defect is not more than 1½ cm. in diameter).

5. Recurrent operative fully reducible inguinal hernias. Recurrent hernias are either of direct or indirect types and the same rules for amenability to treatment apply as for primary hernias.

Bratrud is of the opinion that rapid descent of contents of hernias may be due to adherent omentum in the hernia sac. This, he thinks, leaves the neck of the sac wide open permitting or inviting rapid descent. Regardless of the cause of the rapid descent of the contents of the sac I feel that all these cases should be rejected for injection treatment except again where partial or temporary closure will improve the patient's general health.

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*Read before The Omaha-Midwest Clinical Society, Omaha, Oct. 24 to 28, 1938.

If you will peruse the literature, almost any article which enumerates indications for injection treatment of hernia makes this statement. "Any indirect inguinal hernia which can be reduced and held reduced by a properly fitting truss." Nothing is farther from the truth and nothing places in jeopardy the injection method more than this statement. Why? Because practically 50 per cent of all old indirect inguinal hernias with large internal rings and large canals will recur within sixty days after the truss is removed.

If the injection treatment of hernia is to survive in the hands of qualified recognized surgeons, it is our duty to promulgate rules which will withstand the strictest test and which will be unimpeachable. It has been my experience and is now my conviction that if the five cardinal indications above enumerated are adhered to, we shall have better than 99 per cent cures by this method of treatment.

Contra-indications:

1. Hemophilia.
2. Prostatic obstruction.
3. Uncontrollable cough. (If these cases are treated by injection they will be greatly benefited but they must wear a truss night and day so long as cough persists. It will be found that the general health of these patients greatly improves).
4. Any uncontrollable condition which causes patient to strain.
5. Undescended testicle.
6. All hernias regardless of type not included in the five cardinal indications.

If the surgeon chooses to risk treating an improperly selected case, he will be embarrassed by one of the four following results:

a. No closure whatever of the defect.

b. Temporary closure of the defect with a recurrence.

c. From one to three year's treatment with almost certain recurrence when treatment is discontinued (unless a truss is worn the rest of his life).

d. Greater probability of complications, such as intraperitoneal injection, bowel or bladder perforation, peritonitis or adhesions of abdominal viscera.

RESULTS—As a basis for my plea for conservatism in standardization, a series of 157 completed cases is presented. Of these, 43 cases had large internal rings and canals or had large defects of the direct type. In every case the hernia was completely reducible and was held reduced with a properly fitting truss. The number of treatments varied from 20 to 46 and every case cooperated to the fullest extent. Of this group only 20 appear at this time to be cured. The results in the other 23 have been as follows. There was no closure of the defect; or, there was temporary closure; or, after from one to three years' treatment with recurrence each time treatment was discontinued. There were 112 cases, 18 of which were surgical recurrences and each was classified according to one of the five cardinal indications. Only one of these is not cured. This case had 7 injections given at irregular intervals and failed to return for further treatment. There have been no recurrences in the remaining 111 cases. This report is made only after a careful follow-up of each case.

Authors have stressed the non-amenability to treatment of obese patients and inguinal hernias in women. The five cardinal indications rule applies also in these cases.

Another concept which requires revision is the prevalent idea that any doctor who possesses a syringe, a needle and any sclerosing solution concocted by his druggist or himself and who has a patient who can afford to buy a truss at the corner drug store, can establish himself in the treating of hernias by injection. It has been the experience of those who have attained proficiency in the use of this method over a period of several years that standardization of the solution used is imperative. Until two or three years ago we were disturbed at times because of not obtaining uniformly good results in spite of the use of standard solutions. More recently we have reason to feel that these solutions are properly standardized and dependable. It does not seem reasonable that a druggist or physician who seldom has occasion to prepare a solution for this purpose could compete in quality with the large manufacturer. I have employed three different brands of solutions and have had more uniformly good results with the Proliferols. Of these, Proliferol Solution T Special has given the most prompt closure of the defect with fewer even temporary recurrences. By prompt closure is meant edematous block within 48 hours after the first injection. With other solutions 3 to 6 injections are required to obtain this initial closure. This initial closure is important to the surgeon and gratifying to the patient. With this solution I have experienced no early or late untoward reactions whatever. I agree with Harris, White and Biskind that, "It is important that solutions used be carefully and accurately investigated before being tried on patients. Indiscriminate use of unproven solutions will result in dangerous complications."

The successful injection treatment of hernia requires the consideration of technical details and their order of importance is about as follows:

1. Proper selection of case to be treated.
2. Properly fitting truss.
3. Standard solution.
4. Surgical judgment in properly placing and timing of successive injections.
5. Cooperation of patient in carrying out explicit instructions.
6. Systematic follow-up for one year.

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An Analysis of 186 Consecutive Ambulatory Cases of Heart Disease*

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It is wise to stop at times and determine the direction in which pathways lead us and reflect for a while upon our work. It is with this idea in mind that we have studied the cases seen in the Cardiac Clinic at the University of Nebraska Dispensary.

This clinic is primarily a diagnostic clinic. The cases are ambulatory because we have, as yet, no facilities for hospital study. The clinic was started September 27, 1934. Since that time we have seen 190 individual cardiac cases, 186 of which are included in this review. The relationship of the actual patients seen in the Cardiac Clinic to the number of patients in the dispensary is approximately 1 to 50.

A routine examination has been worked out and adopted in the clinic that is a result of the study and recommendations of the American Heart Association, and of other cardiac clinics. An electrocardiographic tracing is made in all cases together with a teleoroentgenogram. By these studies we have arrived at a diagnosis in accordance with the "Criteria for the Classification and Diagnosis of Heart Disease." This is the accepted standard of the American Heart Association and all recognized cardiac clinics. The diagnosis of heart disease according to the Criteria, is divided into four groups, namely:

1. The etiological group which is comprised of 15 separate classifications;

2. The anatomical group which is comprised of 57 classifications, or anatomical changes that can occur in heart disease;

3. The physiological group which is made up of the physiological changes that can occur in symptoms, regularities, and findings of heart disease.

In addition to this the functional capacity is estimated in each case. This classification is comprised of three estimates regarding Organic Heart Disease, namely:

I. Patients with organic heart disease, *able* to carry on ordinary physical activity without discomfort.

II. Patients with organic heart disease, *unable* to carry on ordinary physical activity without discomfort.

  a. Activity slightly limited.

  b. Activity greatly limited.

III. Patients with organic heart disease and with symptoms or signs of heart disease when at rest, unable to carry on any physical activity without discomfort.

Another classification is Possible Heart Disease, made up of patients in whom the diagnosis of heart disease is uncertain, but who show abnormal signs or symptoms referable to the heart; and Potential Heart Disease, made up of patients without circulatory disease whom it is advisable to follow because of the presence or history of an etiological factor which might cause heart disease.

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*Read before The Omaha-Douglas County Medical Society.

Their etiological diagnosis is as follows:

Anemia—4 cases or 2%.
Arteriosclerosis as a factor—57 cases or 30.6%.
Arteriosclerosis with hypertension alone—22 cases or 12%.
Arteriosclerosis alone—25 cases or 13%.
Arteriosclerosis with Emphysema—7 cases or 3%.
Arteriosclerosis with Thyroid Disease—3 cases or 1.5%.
Congenital—8 cases or 4%.
Emphysema—1 case or .5%.
Hypertension—(essential) 8 cases or 4%.
Other Etiological Factors—12 cases or 6.5%.
Psychoneurosis—17 cases or 9%.
Reflex Action—3 cases or 1.5%.
Rheumatic Fever—53 cases or 28%.
Syphilis—19 cases or 10%.
Thyroid Disease—(alone) 2 cases or 1.5%.
Unknown—7 cases or 3.5%.

Anemia as a factor in heart disease:

This group is a small factor in this series, totaling 4 in number. The various classifications are as follows:

Anatomical Diagnosis:
Mitral Insufficiency—2 cases.
Pulmonic Insufficiency—1 case.

Physiological Diagnosis:
Sinus Rhythm—4 cases.
Sinus Arrhythmia—1 case.

Functional Classification:
Class I—1 case.
Class II A—1 case.
Possible and Potential Heart Disease—2 cases.

Arteriosclerosis as a factor in heart disease:

This number of patients is the largest single group as an etiological agent for heart disease. The figure, 57, represents all the patients in which arteriosclerosis is a factor. Of this number 25 may be classified as being primarily arteriosclerotic, no other etiological factor.

The cases in this group are presented with the following findings:

Anatomical Diagnosis:
Arteriosclerosis of the Aorta—2 cases.
Dilatation of the Aorta—2 cases.
Arteriosclerosis of the Coronary Artery—all cases.
Coronary Thrombosis—6 cases.
Enlargement of the Heart—(by x-ray and physical examination)—18 cases.
Chronic Valvular Disease—only 3 cases. (1 of these was aortic insufficiency, 2 aortic stenosis, 1 mitral insufficiency, and the other mitral stenosis).

Physiological Diagnosis:
Anginal Syndrome—15 cases.
Auricular Fibrillation—3 cases.
Auricular-Ventricular Block—2 cases.
Prolonged Conduction Time—1 case.
Bundle Branch Block—3 cases.
Paroxysmal Tachycardia—1 case.
Premature Contraction—11 cases.
Sinus Rhythm—20 cases.
Sinus Bradycardia—1 case.
Sinus Tachycardia—4 cases.
T-Wave Changes—16 cases. (Of the patients with angina pectoris and arteriosclerotic heart diseases, 8 of them had T-Wave Changes).

Functional Classification:
Class I—none.
Class II A—5 cases.
Class II B—16 cases.
Class III—3 cases.
Potential Heart Disease—1 case.

Arteriosclerosis with Hypertension as a factor in Heart Disease:

This group is comprised of 22 cases. Arteriosclerosis and hypertension are so frequently associated that it is difficult to classify this group. However, the distinction is made by the presence or absence of associated arteriosclerosis. It is rather surprising to find the age incidence of this group to be practically identical with the arteriosclerotic group, the age incidence of which is 58.4 years. The age incidence of this group is 57.7 years.

Anatomical Diagnosis:
Arteriosclerosis of the Aorta (with dilatation)—1 case.
Arteriosclerosis of the Coronary Artery—21 cases.
Coronary Thombosis—1 case.
Enlargement of the Heart—22 cases.
Chronic Valvular Disease—6 cases.
Mitral Insufficiency—6 cases.
Acute Hemorrhagic Pericarditis—1 case.

Physiological Diagnosis:
Anginal Syndrome—15 cases (1 case with Adam Stokes syndrome).
Bundle Branch Block—1 case.
Nodal Rhythm—19 cases.
Premature Contraction—3 cases.
Sinus Rhythm—19 cases.
T-Wave Changes—16 cases.
Anginal Syndrome and T-Wave Changes—13 cases.

Arteriosclerosis with Emphysema as a factor in heart disease:

Seven cases are presented in this group which again shows a relatively high age incidence of 67 years.

Anatomical Diagnosis:
Arteriosclerosis of the Coronary Artery—7 cases.
Enlargement of the Heart—3 cases.

Physiological Diagnosis:
Anginal Syndrome—5 cases.
Sinus Rhythm—7 cases.
Premature Contraction—1 case.
T-Wave Changes—2 cases (both associated with hypertension).

Functional Classification:
Class I—none.
Class II A—1 case.
Class II B—4 cases.
Class III—1 case.

Arteriosclerosis and Thyroid Disease as a factor in heart disease:

This group, comprised of 3 cases, is relatively small, which is surprising because of the prevalence of thyroid disease in this locality.

Anatomical Diagnosis:
Arteriosclerosis of the Coronary Artery—3 cases.
Enlargement of the Heart—3 cases.
Chronic Valvular Disease—1 case.
Mitral Insufficiency—1 case.

Physiological Diagnosis:
Anginal Syndrome—2 cases.

Prolonged Conduction Time—1 case.
Incomplete Bundle Branch Block—1 case.
Sinus Rhythm—3 cases.
Sinus Bradycardia—3 cases.
T-Wave Changes—1 case.

Functional Classification:
Class II A—none.
Class II B—1 case.
Class III—2 cases.

Congenital Heart Disease:

The 8 cases in this group represent a cross-section of congenital heart disease. Statistics in other heart clinics show the percentage of this type of heart disease to run from 2% to 4%. This figure is borne out in this study. The age incidence is also in line being 23 years.

Anatomical Diagnosis:
Congenital Defect—8 cases.
Enlargement of the Heart—8 cases.
Other Lesions of the Heart—1 case (ventricular defect).
Chronic Valvular Disease—8 cases.
Patent Ductus—2 cases.
Pulmonary Stenosis—6 cases.

Physiological Diagnosis:
Sinus Rhythm—7 cases.
Wandering Pacemaker—1 case.
Right Preponderance—1 case.

Functional Classification:
Class II A—7 cases.
Class III—1 case.

Emphysema as a factor in heart disease:

Emphysema as a factor, other than that associated with arteriosclerosis, was present in only 1 case. This was definitely a postural syndrome.

Anatomical Diagnosis:
Chronic Valvular Disease—1 case.
Mitral Insufficiency—1 case.

Physiological Diagnosis:
Sinus Rhythm—1 case.

Functional Classification:
Class II A—1 case.

Hypertension (essential) as a factor in heart disease:

The essential hypertensive group has 8 cases with an age incidence of 37.1 years. While this group is small it is very characteristic of this type of heart disease.

Anatomical Diagnosis:
Enlargement of the Heart—8 cases.
Mitral Insufficiency—1 case.

Physiological Diagnosis:
Anginal Syndrome—3 cases.
Sinus Rhythm—7 cases.
Premature Contraction—1 case.
T-Wave Changes—4 cases.

Functional Classification:
Class II A—5 cases.
Class II B—2 cases.
Class III—1 case.

Other Etiological Factors in heart disease:

Other etiological factors present a group of 12 cases with varying types of disease and deformity. It is interesting to note that this type of heart disease seems to be a less serious type. The factors in these cases were:

Chest Deformity—3 cases.
Cervical Rib—1 case.
Pregnancy—2 cases.
Bronchiectasis—1 case.
Syphilis—1 case.
Obesity—1 case.
Nephritis—1 case.
Tuberculosis—1 case.
Diabetes—1 case.

Anatomical Diagnosis:
Mitral Insufficiency—2 cases.

Physiological Diagnosis:
Premature Contraction—2 cases.
Pulsus Alternans—1 case (chest deformity).
Sinus Rhythm—12 cases.
Sinus Arrhythmia—2 cases.
Sinus Tachycardia—1 case.

Functional Classification:
Class I—4 cases.
Class II A—none.
Class II B—1 case.
Class III—1 case.
Possible Heart Disease—3 cases.
Potential Heart Disease—3 cases.

Psychoneurosis as a factor in heart disease:

Seventeen cases, in which organic heart disease was not demonstrable, present themselves in this clinic. This again is a younger type of patient, the age incidence being 33.8 years.

Anatomical Diagnosis:
None.

Physiological Diagnosis:
Anginal Syndrome—2 cases.
Sinus Rhythm—17 cases.
Premature Contraction—1 case.

Functional Classification:
Possible Heart Disease—17 cases.

Reflex Action as a factor in heart disease:

This is a small group made up of 3 cases and younger individuals whose average age is 26.2 years. In these cases variations in the rhythm of the heart are present, but these is no other organic heart disease.

Anatomical Diagnosis:
None.

Physiological Diagnosis:
Sinus Rhythm—3 cases.
Sinus Tachycardia—3 cases.
Premature Contraction—1 case.

Functional Classification:
Potential Heart Disease—3 cases.

Rheumatic Fever as a factor in heart disease:

The rheumatic group is the largest group seen in the clinic, numbering 53 cases in all. This is by long odds the most serious type of heart disease seen in the clinic. On close analysis it is rather startling to find that more than ¼ of the total cases fall into this group. It has been previously shown that Nebraska is in the rheumatic fever belt, but the high incidence of this type of case seen in this clinic presents a serious problem because of the disability that ensues in this type of heart disease. The age incidence is 23.5 years.

Anatomical Diagnosis:
Enlargement of the Heart—39 cases.
Chronic Valvular Disease—12 cases.
Acute Valvular Disease—1 case.
Aortic Insufficiency—10 cases.
Aortic Stenosis—1 case.
Mitral Insufficiency—13 cases.
Mitral Stenosis—30 cases.

Physiological Diagnosis:
Adam Stokes Syndrome—1 case.
Anginal Syndrome—none.
Auricular Fibrillation—5 cases.
Auricular-Ventricular Block—1 case.
Bundle Branch Block—1 case.
Sinus Rhythm—44 cases.
Sinus Bradycardia—2 cases.
Sinus Tachycardia—3 cases.
T-Wave Changes—4 cases.

Functional Classification:
Class I—4 cases.
Class II A—19 cases.
Class II B—16 cases.
Class III—4 cases.
Potential Heart Disease—10 cases.

Syphilis as a factor in heart disease:

Syphilis was an etiological agent in 19 cases of this series. The age incidence was 45.9 years, as would be expected.

Anatomical Diagnosis:
Aneurysm of the Aorta—2 cases.
Aortitis with Dilatation—7 cases.
Arteritis of the Coronary Artery—5 cases.
Arteritis of the Aorta—8 cases.
Enlargement of the Heart—12 cases.
Chronic Valvular Disease—11 cases.
Aortic Insufficiency—10 cases.
Aortic Stenosis—1 case.
Mitral Stenosis—1 case.
Pericarditis—1 case.

Physiological Diagnosis:
Anginal Syndrome—3 cases.
Premature Contraction—2 cases.
Sinus Rhythm—19 cases.
Sinus Bradycardia—1 case.
Sinus Tachycardia—1 case.
T-Wave Changes—9 cases.
Anginal Syndrome and T-Wave Changes—3 cases.
T-Wave Changes without Anginal Syndrome—7 cases.
Anginal Syndrome without T-Wave Changes—1 case.

Functional Classification:
Class I—none.
Class II A—2 cases.
Class II B—12 cases.
Class III—none.
Potential Heart Disease—5 cases.

Thyroid Disease alone as a factor in heart disease:

There were only 2 cases in this group, a relatively small number compared to the prevalence of thyroid disease in the general clinic.

Anatomical Diagnosis:
Enlargement of the Heart—2 cases.

Physiological Diagnosis:
Sinus Rhythm—2 cases.
Sinus Tachycardia—1 case.
Sinus Bradycardia—1 case.
Anginal Syndrome—none.

Functional Classification:
Class I—none.
Class II A—1 case.
Class II B—1 case.

Unknown:

This etiological classification presents anatomical findings without etiological agent, and as readily can be seen, would be the group in which murmurs are the predominating finding. There are 7 cases in this group.

Anatomical Diagnosis:
Mitral Insufficiency—6 cases.
Pulmonic Insufficiency—1 case.

Physiological Diagnosis:
Anginal Syndrome—1 case.
Sinus Rhythm—7 cases.
Sinus Tachycardia—1 case.

Functional Classification:
Class I—3 cases.
Possible Heart Disease—7 cases.
Potential Heart Disease—7 cases.

Certain symptoms and physical signs mean much in the study of heart disease. The question of an enlargement of the heart has probably caused as much discussion in recent years as any single medical factor in heart disease.

In a series of this type it is interesting to note the various causes of enlargement that can be demonstrated by physical examination and x-ray study. In this series cardiac enlargement was demonstrable in relation to etiology as follows:

Arteriosclerosis in 18 out of 25 cases.
Arteriosclerosis with hypertension in 22 cases out of 22.
Arteriosclerosis with emphysema in 3 cases out of 6.
Arteriosclerosis with thyroid disease in 3 cases out of 3.
Congenital heart disease in 8 cases out of 8.
Essential hypertension in 8 cases out of 8.
Rheumatic fever in 39 cases out of 53.
Syphilis in 12 cases out of 19.
Thyroid disease alone in 2 cases out of 2.

Systolic murmurs have also been the occasion for particular study, and in this series occur in:

Anemia in 2 cases out of 4.
Arteriosclerosis in 1 case out of 25.
Arteriosclerosis with hypertension in 6 cases out of 22.
Arteriosclerosis with thyroid disease in 1 case out of 3.
Congenital heart disease in 1 case out of 8.
Emphysema alone in 1 case out of 1.
Essential hypertension in 1 case out of 8.
Other etiological factors in 2 cases out of 12.
Rheumatic fever in 13 cases out of 53.
Unknown in 6 cases out of 7.

The anginal syndrome was present in 38 cases of this series with the following distribution:

Arteriosclerosis in 15 cases out of 25.
Arteriosclerosis with hypertension in 15 cases out of 22.

Arteriosclerosis with emphysema in 5 cases out of 6.
Arteriosclerosis with thyroid disease in 2 cases out of 3.
Essential hypertension in 3 cases out of 8.
Psychoneurosis in 2 cases out of 17.
Syphilis in 3 cases out of 19.
Unknown in 1 case out of 7.

SUMMARY AND CONCLUSIONS

The study of 186 ambulatory cases of heart disease is presented, and while the series is small it brings out several factors, namely:

1. Rheumatic heart disease is quite frequent in this area, and by far the most disabling type seen in the clinic.

2. The age incidence of arteriosclerotic heart disease and arteriosclerotic heart disease with hypertension is approximately the same, although the hypertensive group has more apparent serious cardiac findings.

3. The relative incidence of luetic heart disease is approximately what one would expect in comparison with other clinics.

4. The incidence of thyroid hearts is low in this series.

5. Congenital heart disease is relatively infrequent as in other clinics, but of serious nature when seen.

6. Essential hypertensive heart disease is not as frequently seen as would be expected.

While this study enables us to determine the trends and types of heart disease, it also gives us a chance in the future to study these types in more detail.

A Pneumatic Lift for Gallbladder and Kidney Operations

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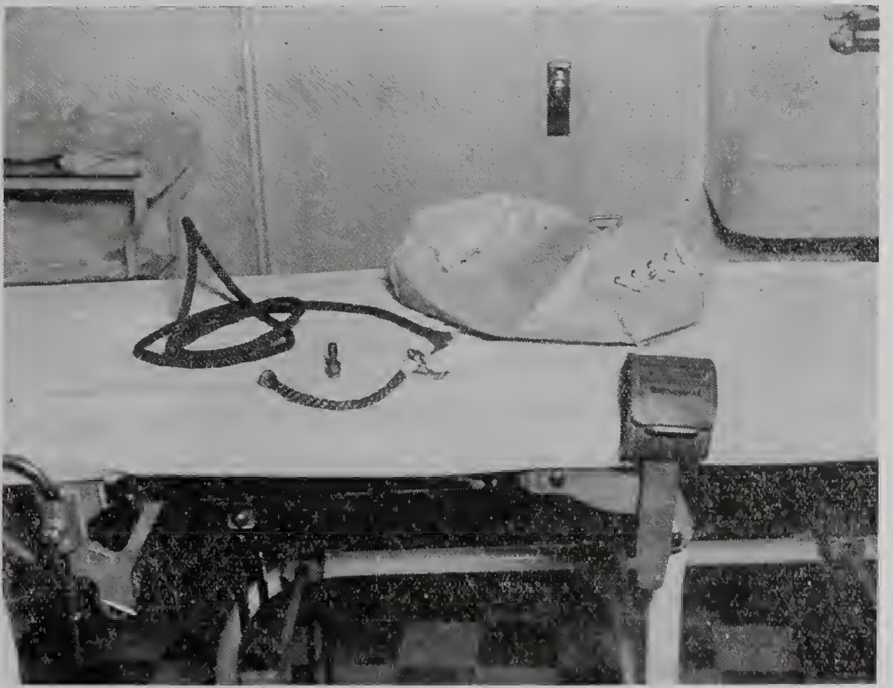
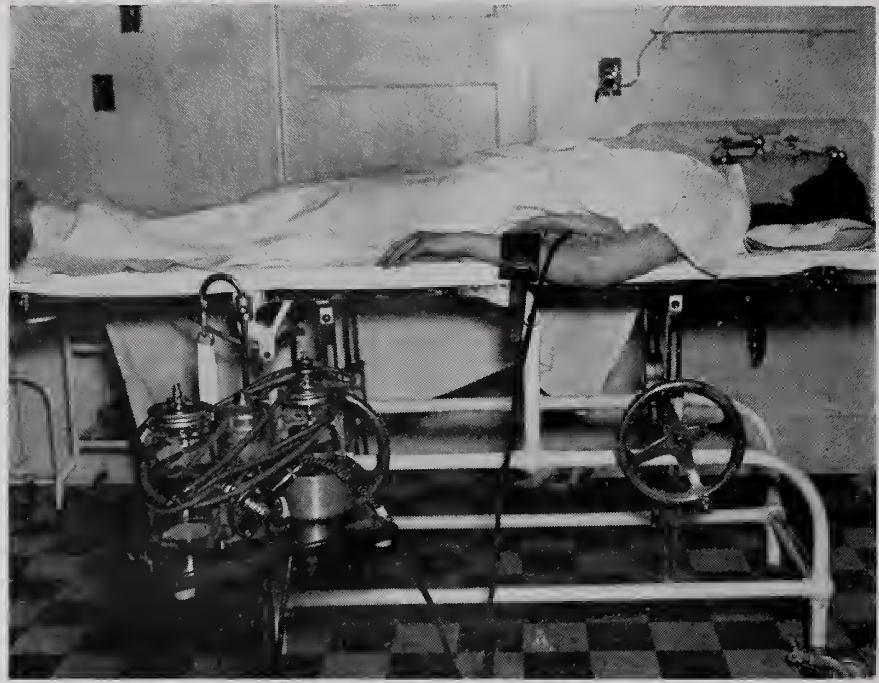
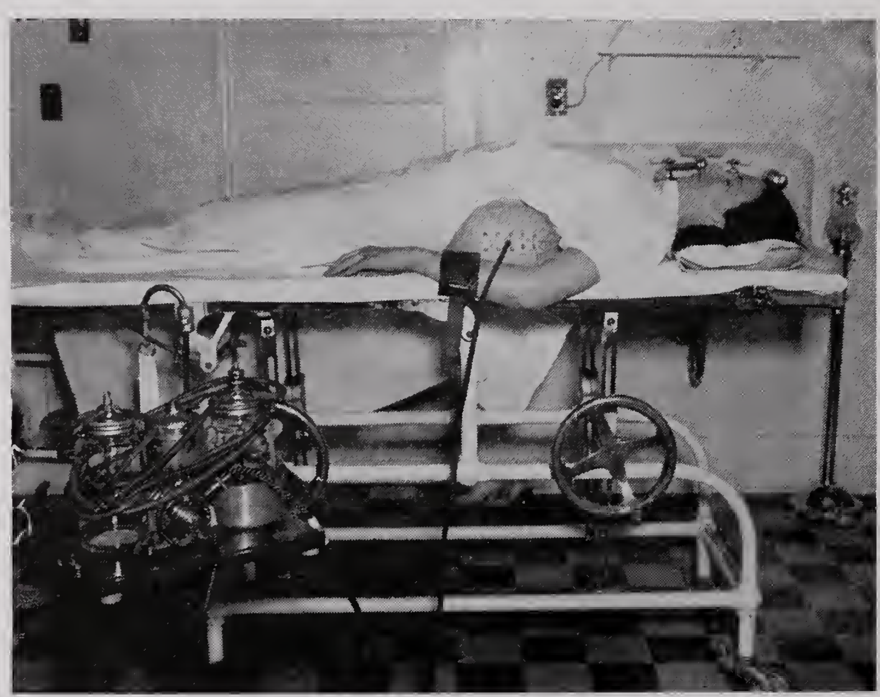
Patients having had a gallbladder or kidney operation, where a mechanical lift is necessary to make a better exposure, have complained of backache or pain in the ribs from the mechanical pressure of the lift. We have tried kopac pillows, sand bags, metal mechanical lifts and no matter how they are padded, complaints are still made.

We have devised a pneumatic lift which is simple, cheap, easily constructed and can be used in any clinic. We had a rubber bag made out of ordinary bladder rubber, the same as in a foot ball only that it is cylinder shaped. It is twenty-four inches long and fifteen inches in diameter. The ends are flat and have an ordinary valve in one end. We had a glove leather cover made to fit this bag and a rubber tube attached either to an air pressure tank or the pump on a Sorenson or McKesson tonsil ether pump and sufficient







pressure of air can be used to lift patient to the desired height.

The first photograph shows the bag and tubing connections. The second shows the bag placed under patient before anesthetic is started. The third shows the bag filled with air for position desired. By the use of this bag we eliminate all complaints of backache and rib ache from lifting a patient under an anesthetic.

This is a simple device, easily constructed and the patient will not rock on the bag. It holds him firmly in the position as well as any mechanical lift on the market. It has been a great help in our clinic for either gallbladder or kidney operations.

In order to keep from staining the bag from chemicals or spill-overs, we cover the bag with an extra canvas which is washable.

Bone Marrow Biopsy*

J. P. TOLLMAN, M. D.,

Omaha.

In the study of the blood diseases, a great deal is to be learned from the stained blood film and other procedures, such as the hematocrit. In the majority of the cases studied, other procedures will give sufficient information to make a diagnosis and to indicate the prognosis.

There are additional cases, however, in which the information is inadequate or indecisive. In a search for other procedures that will give valuable information, a study of the bone marrow has been suggested, and has been used for several years to good advantage.

It has, of course, been known for many years that the bone marrow at autopsy gives significant, and at times, diagnostic information. So it is not surprising that methods have been devised for studying the bone marrow during life.

Several factors have hindered a more wide spread use of the bone marrow biopsy. Until recently, methods for obtaining bone marrow have been rather difficult. Undoubtedly some have been deterred after looking at a few specimens, for they seem to be a maze of cells. Some idea of the activity of the bone marrow may be gained, if we do a little figuring from the known life of the various cells. Red blood cells swim in the circulation for an average of twenty-five days. Four percent then, must be added each day, which reaches a rather sizeable figure to maintain a count of five million in each cu. mm. of four or five quarts of blood. White blood cells last three to five days only, so 20% to 30% must be made each day, again an astounding figure. The total mass of the marrow has been estimated as about 1200 to 1400 grams, approximately the size of the liver.

In the adult, we find that all marrow is not equally active. The shafts of the long bones lose their active blood forming tissue and fat replaces it. Thus, in the adult, we expect to find active marrow in the flat bones of the head, sternum, pelvis, ribs, and the bodies of the vertebrae. The fatty or yellow marrow has not entirely lost the power to make blood, for we find in the femur, for instance, tiny islands of blood forming cells here and there, and in the case of excessive demand, the blood forming activity is again taken up.

TECHNIC

With the foregoing discussion of the areas of most active blood formation, it is obvious that we would expect to find our representative tissue in the flat bones. The most accessable of the flat bones are the sternum and the ribs.

The sternum is the more convenient of the two, because it is larger and easier to work on.

These types of removal of the marrow are practiced:

The older and more difficult is surgical removal of a fragment or button of the marrow. After the usual surgical sterilization of the skin and instruments, and anaesthesia of the region, a short incision, 1 cm. or so, is made into the skin, and through the periosteum. By retracting the borders, an exposure of the outer table is obtained. A chisel, or circular drill, is used to cut this table, exposing the marrow. A fragment of marrow may then be removed, or the drill is removed with the button of bone and marrow. The marrow is very vascular, but the blood is not under any appreciable pressure and bleeding soon stops with packing. The wound is then closed, ordinarily sutures being used only in the skin. This does leave a small linear scar, and is not suited to repeated observations. This does give a very satisfactory mass of marrow for study.

The preferable preparations are made by touching the mass of marrow to a glass slide repeatedly, (20 to 30 times). This allows a layer of cells to stick to the slide. Not a particularly beautiful preparation, but it escapes distortion of the cells, and shows them in approximately normal relations and numbers. The slide is stained by Wright's or Wright-Giemsa stain. The cells stain as they would in blood, and give a very nice preparation to study. The first several touches will be contaminated by blood on the surface, but with a larger number of touches, several will be found which give a clear picture of the cells. Sections are usually made which show the cells in their normal relations.

A simpler method uses a needle for obtaining the marrow. Several special needles and various technics have been advanced. Needles of various bore have been used, from spinal puncture needles to large aspirating needles. They are all intended to enter the marrow and obtain a very small fragment of marrow, and loosen some of the cells.

The usual procedure is to sterilize the skin, then anaesthetize it and the periosteum, or it can be done without anaesthesia. The needle is then introduced, pointed toward the head at an angle of 30 degrees to the skin and pushed through the outer table. This requires considerable pressure. After the needle is felt to pass into the marrow space the stylet is removed and the needle advanced to 0.5 to 1.0 cm. This presses (or pushes) some of the marrow into the needle which can then be carefully withdrawn. Some advocate applying very slight suction with a syringe. This has the objection of aspirating blood in some quantity, and making subsequent observations more difficult. This, of course, alters very much the proportions of cells in the smear. This aspiration may cause the patient some discomfort.

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*Read before The Omaha-Midwest Clinical Society, Oct. 28, 1937.

After removal of the needle, the stylet is introduced and the marrow is forced out of the needle. If it is forced just to the end of the needle touch preparations of smears can be made. There is often, especially in the large needles, a mass of marrow that can be sectioned if desired. The smear or touch preparations are stained by Wright-Giemsa method.

INTERPRETATION

The blood is ordinarily considered to reflect the condition of the bone marrow. In all ordinary circumstances it does so. It is in the unusual instances that the bone marrow biopsy is valuable.

The cells, as we have indicated, have much the appearance of the cells of the circulating blood so far as staining character is concerned. The majority of the cells are immature types that do not appear in the circulating blood, but after studying leukemia smears, they are somewhat familiar. Proportions are much different from the circulating blood. Nucleated cells only are counted, and a differential is drawn up as for blood smears.

TABLE OF NORMAL VALUES

Bone Marrow Counts

Segmented Neutrophils	13.3	7—25
Segmented Eosinophils	.45	0— 1
Segmented Basophils	.1	0— .2
Staff Neutrophils	24.1	15—35
Staff Eosinophils	.8	0— 2.6
Staff Basophils	.06	0— 1.0
Young Neutrophils	7.4	1—10
Young Eosinophils	.64	0— 2
Young Basophils		
Myelocytes	.86	0—10
Promyelocytes I	1.68	0— 5
Promyelocytes II	1.48	0— 5
Blasts	.44	0— 2
Lymphocytes	10.6	4—16
Monocytes	2.06	0— 5
Normoblasts	12.4	5—20
Megaloblasts	1.7	0— 5
Disintegrated	20.8	10—30
Reticulocytes	1.95	1— 5
Ratio	3.61/1	2/1— 9/1

According to Osgood.

The variations will ordinarily resemble those found in circulating blood, except that we are dealing with the incomplete products of the bone marrow so to speak.

A more detailed discussion of the findings in a few diseases may clarify a few points.

In anemias a question may arise occasionally as to the state of the bone marrow, to aid in making a diagnosis, or assisting in prognosis.

A resume of the stages of development of the red blood cells may make it somewhat easier to primitive cell of the material is similar to the blast cell of the polymorphonuclear series. This is followed by a stage designated as the megaloblast. The cells are large, being 2½ to 3 times the diameter of the normal red cell, that is, measuring 15 to 20 microns in diameter. The nucleus is ordinarily about 12 microns, or the size of a mature polymorphonuclear cell. The nucleus is very finely reticular and several nucleoli are usually visible. The cytoplasm stains a deep blue with Wright's-Giemsa stain and contains no granules.

The next stage in development, the basophilic normoblast, is somewhat smaller in size. The cytoplasm begins to show some irregularity, and ordinarily the pinkish stain of the hemoglobin begins to show through the blue areas. The chromatin of the nucleus has arranged itself into somewhat coarser strands, so that the nucleus has a definite outline. The cells are about the size of a mature polymorphonuclear cell. The size of the mature cell is apparently determined by the time spent at this stage. As the cell becomes more mature, it shrinks progressively in size and the nucleus becomes more compact.

The next stage is the eosinophilic normoblast, or the usual type of nucleated red cell occasionally found in circulating blood, particularly in severe anemias. It is not uncommon to find nuclear particles in these cells, sometimes many particles being found scattered through the cell. It seems that the time spent in this stage determines the amount of hemoglobin the mature cell will carry.

The next stage in development is characterized by the loss of the nucleus but a fine reticulum may be seen by appropriate stains. This reticulum does not show with the ordinary Wright stain preparation. This is followed then by the mature erythrocyte in the blood stream.

In secondary anemia of hemorrhage where there is good response, the cell forms will be normal, with a shift in the proportion of cells. The number of developing red forms will be increased, but the cell forms will be within normal range. To compare the figures of the differential with the chart then, we will find that the ratio, instead of 2 to 1 in favor of the white cell forms, will be nearer 1 to 1 or may favor the red cell forms.

Anemias of infection will show a somewhat different picture. With infection, there seems to be a delay in the basophilic normoblast stage, that is, before the cell has accumulated much hemoglobin. The cells then apparently mature quite rapidly, in other words, pass through the eosinophylic normoblast stage very rapidly, and are accordingly deficient in hemoglobin. A similar type of red cell change may be noticed in the case of leukemia.

Another type of anemia, so far as the bone marrow picture is concerned, is that associated with chronic kidney disease of a severe type, according to the study of Isaacs. He has found an increase in the number and relative percentage of cells of the primitive blast stage. He indicates that these cells may be taken for infiltrating cells of lymphatic type, in other words, that the bone marrow may suggest a lymphatic type of leukemia, with infiltration by lymphoblastoma cells. He finds that some of the cells mature, but the number is rather small although the maturation is quite orderly. The bone marrow picture seen in aplastic anemia is in some respects similar. Such cells as are found in aplastic anemia are ordinarily of the primitive blast stage. But these cells are reduced in number so that the whole bone marrow gives a picture of the loss of activity. To contrast the two forms, then, the bone marrow of chronic kidney disease shows an arrest in the primitive blast stage, but with a considerable number of these cells, while the aplastic anemia shows an arrest in the primitive blast stage but with a very small number of these cells.

The clinically different types of anemias characterized by macrocytes show still another bone marrow picture. These are pernicious anemia, the anemia of cirrhosis of the liver, and the macrocytic anemias of pregnancy, etc. These are the deficiency anemias which respond to treatment by liver extract or stomach extract. The point of arrest in the development of the red cells is here the stage of megaloblast. This is the stage of red cell development in which the nucleus is considerably more distinct, and the cytoplasm, while still very blue, shows some irregularity in its coloring. The cells which are delayed at this point in their development reach a size larger than normal. If they then proceed rather slowly to the other stages of development, they will also accumulate a relatively large amount of hemoglobin. This idea is derived from the fact that the bone marrow in these types of anemia is usually crowded with red cells of this early or megaloblastic stage. Sections or preparations of bone marrow from a case of pernicious anemia will be very cellular, and it is also found that the bone marrow of the femurs has also become very active. Because of the lack of this extrinsic factor supplied by liver extract or stomach extract, however, the maturation does not take place and so the number of red cells in the circulating blood is considerably diminished. Such cells as are present in the circulating blood will average somewhat larger than normal size, and in occassional cases will average considerably larger than normal size. They also carry an unusually large compliment of hemoglobin.

The study of bone marrow for the observation of changes in white cell formation leads us to a consideration of several types of bone marrow pictures. Bone marrow biopsy is not ordinarily done to observe the changes produced by acute infection. Observation of such bone marrow changes are ordinarly done at autopsy and indicate the end result of the bone marrow change ,perhaps in many instances indicate the changes which have been associated with an insufficient response. It is found that in such conditions there is a marked proliferation of the white forming elements, with a distortion of the ratio between the red and white forming elements in favor of the granulocytic cells. With the ordinarily somewhat favorable response, there is an orderly development of these white cells in which the staff and younger forms are all present in considerable numbers. Frequently there is a comparative diminution of segmented forms. This may be found in some cases even where the peripheral blood has shown relatively few cells. The quite opposite response on the part of the individual is the condition in the disease variously known as malignant leukopenia, agranulocytosis, granulocytopenia and so on. Marked variation is to be found in the bone marrow depending on the duration of the disease processes. In the typical acute cases, that is, where the individual dies within three or four days of the onset of the disease, a large number of blast cells, or as some call them, stem cells, are found. These may appear to be quite active, and mitotic figures may be rather frequent. There is no indication of further maturation, however, and the stages from the myelocyte on to the mature white cell are not found. In those instances where the individual lives more than four or five days but dies in from seven to ten days, the picture is usually somewhat different. The peripheral blood picture is ordinarily the same, that is, few or no granulocytic cells are seen, but only lymphocytes and they are usually in numbers from 500 to 1000. In the bone marrow, as in the previous type, the cells of the red blood cell series are essentially normal. The myeloid series will be represented by a few blast cells and generally by rather rare myelocytes. More mature myeloid cells, that is the young, staff or segmented forms, are not fonud. There is generally at this stage a considerable increase in the number of plasma cells and of lymphocytes. A number of cases have been reported in which the ordinarily inactive marrow of the femur has shown this attempt at white cell formation, but the proliferation of stem cells has not resulted in a change in the peripheral blood picture. We have not seen cases in which the process is of longer standing. Several cases have been described, however, in which after several weeks time, the myeloblasts have become somewhat more numerous, although the peripheral blood picture still shows few if any granulocytes. Bone marrow biopsy in this disease process occasionally will give valuable information. It has been found that evidence of proliferation of bone marrow appears before granulocytes increase appreciably in the circulating blood. Biopsy might therefore give some indications as to whether recovery might be expected. A more valuable index of the cases would undoubtedly be aspiration biopsies repeated several times to determine whether any change or improvement had occurred in the marrow itself.

Another division in the diseases involving the white blood cells are the leukemias. The process is not limited in bone marrow to the normally functioning foci in the flat bones, but involves the yellow or fat marrow of the long bones as well. If the biopsy obtains a sizeable fragment of the bone marrow, we find instead of the semi-fluid reddish-gray-brown marrow of the sternum, that the marrow has become more or less homogeneous, somewhat gelatinous in consistency, and can usually be cut into small blocks.

If by any chance the marrow of the femur were to be examined, an essentially similar picture would be found, the fat having been replaced by the pinkish-gray to yellowish-gray, homogeneous tissue. On examining a section or a preparation of such material, the most obvious thing is the marked monotony of the cellular picture, and the very marked increase in the number of cells in the marrow. Only very small scattered islets of red cell formation will be found. This of course will result in the marked disturbance in the proportion of cells, the white cell forms very far outnumbering the red cell forms. As was indicated earlier, a number of these leukemias will show a tendency for the inhibition of red cell formation, at the stage of the normoblast, especially of the basophilic type. The degree of maturation found in the white cell forms will depend on the acuteness of the leukemic state. In the chronic myeloid form, the number may appear to be very considerably increased but the various stages of development are all represented and the proportion may not be greatly disturbed. In the acute myeloid type, however, the cellular picture is much more monotonous, and there tends to be a greater and greater number of blast cells and non-granular cells as with the more acute forms of the disease. Red cell forms are likely to be crowded out by the rapidly proliferating myeloblasts.

In the lymphatic type of leukemia, the picture that we get is that of pathologic transfer of lymphopoiesis to the bone marrow, or as some believe, an infiltration of the bone marrow by the lymphoid cells. The important point is that the bone marrow shows evidence of the leukemic process. The same is true in the monocytic leukemias. In connection with these monocytic leukemias, it should be remembered that the monocytes are derived from the reticulo-endothelial system, and occur naturally in the bone marrow, as well as in the spleen, liver, and lymphoid tissue, although normally the number of these cells is very small. The bone marrow biopsy may be of considerable value in arriving at a correct diagnosis of these cases of leukemia. The majority of cases, of course, show a marked leukocytosis with the characteristic cells appearing in the circulating blood. Little or no information is ordinarily derived from bone marrow biopsy in these instances. There is, nevertheless, a substantial number of cases varying from five to twenty-five per cent in various series in which the blood shows a leukopenic, or the so-called aleukemic blood picture. It is not uncommon for the individual to pass through so-called aleukemic phases in which the abnormal cells disappear partially or completely from the circulating blood. The bone marrow, however, will show the characteristic process and from touch preparations or a bone marrow smear, a diagnosis may be made.

The difficulty in the diagnosis of blood dyscrasias arises from the fact that several of these conditions have some findings in common. For instance, aplastic anemia, pernicious anemia, malignant neutropenia, and thrombocytopenic purpura and some leukemias all have in common these findings, namely: anemia, leukopenia, and thrombocytopenia. There are some authors who believe that this triad of anemia, leukopenia and thrombocytopenia is more often due to leukemia than to other conditions mentioned. These findings in the peripheral circulating blood suggest a widespread pathological process with the destruction of the myeloid tissue of the marrow. Such a destruction may be accomplished by more than one factor. It is for the interpretation then, of this triad of symptoms, that the findings of the bone marrow biopsy prove very useful. Curiously, a number of reports are found in which leukemia of the myeloid type and pernicious anemia have been confused. It comes about because the individual has a severe anemia and an attendant leukopenia. Those white cells which have appeared in the circulating blood are termed as large lymphocytes. More careful observation may bring out that in reality these are extremely immature cells of myeloid origin, but it is not necessary that myeloid cells appear, and it is not always possible to trace the origin of the cells found in the circulating blood. Bone marrow examinations, however, will differentiate between these two diseases. The importance of this differential diagnosis can be seen if we remember that under the present regime of treatment, a very high proportion of cases of pernicious anemia will respond favorably to treatment, while the prognosis in leukemia is 100% fatal.

Bone marrow and lymph node biopsy may be of value in differentiating cases of infectious mononucleosis or so-called glandular fever from some of the cases of leukemia with an almost similar clinical picture.

SUMMARY

1. Biopsy of bone marrow is a feasible procedure.

2. In some obscure blood disturbances it may give valuable aid to diagnosis or prognosis.

Socialized Medicine in Sweden

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Omaha.

In these times when wars and rumors of wars are gripping the world in anxious expectation we turn to Sweden for inspiration and consolation. Not in 124 years has Sweden been at war; she maintains a small army and navy, is not burdened with war pensions, and only in the past year has she felt constrained to prepare for defense. It is Russia, more than Germany, that she fears for Russia is in need of an outlet to the sea.

With this freedom from wars Sweden has diverted her resources to industrial and cultural pursuits. And today Sweden is the most prosperous of nations. Her forests, mines and agricultural products find a ready and profitable market. The Swedes are frugal, industrious and honest. Content to live the simple life while doing an honest day's work they are enjoying comforts without luxury, and are seemingly as content as it is possible for humans to be.

For a thousand years Sweden has been a self-governed nation. Her King is without power, save in an advisory capacity, there is no graft in her politics, and while taxes are high her people feel that the taxpayers' money is honestly, if not always wisely, spent. With no civil service in force competent office holders have a life tenure of office.

Sweden is little more than double the size of the State of Nebraska, with a population of 6,500,000, more than 90% of which are Swedes. The resources of Sweden are largely derived from her forests which cover 50% of her land, from her iron and copper mines and her farms. Industry has developed to a marked degree, due to her unlimited water power, but, more than all, Sweden is prospering because her people work and save. Her banks are full of money loaned at 2 to 3 per cent, and as a result new building is seen on every hand. It would appear that Sweden has solved the problem of production and distribution.

With a small national debt Sweden is well out of the red for she owns the railroads, telephones, telegraph and radio, and half of the forests, iron and copper, all of which are making a profit.

There are only 15,000 on relief in Sweden. An able-bodied man who refuses to work is put into a camp where he is compelled to work. An applicant seeking relief must produce a certificate from his last employer certifying that he was honorably discharged. Supplies, not money, are given to those on relief. A man on strike gets no relief.

Sweden's weakness, as I view it, lies in the draining of her reserves for the purpose of bringing about the more abundant life for all her people. She is in the high tide of prosperity now, but when adversity comes, as come it will, there may be a lack of reserves to carry on. Here are but a few of the cooperative movements promoted now so successfully:

1. Cooperative factories in which flour, bread, rubbers, shoes, macaroni, artificial silk, light bulbs and oleomargerine are made.

2. Cooperative shops with one-third of the

population share-holders and participating in the profits while buying at somewhat reduced prices.

3. Farmers' Cooperatives for sale of milk, butter, eggs, apples, and other farm products.

4. Cooperative Savings Banks paying 3½%.

5. Cooperative housing to provide modern accommodations for the low and middle income groups. More than 18,000 families are now provided for in Stockholm, and 5,000 more units are under construction. There are playgrounds supervised by nurses and doctors, central radio stations with connections in every unit, a central heating plant and laundry, kindergartens, club rooms, and even a Children's Hotel is provided for children whose parents are unable to care for them. The public schools feed all children, rich and poor alike. There are day nurseries for the children of working mothers and summer camps for children of all ages. The grown-ups are not overlooked and we see groups of garden houses, tiny houses with a small plot of ground, where the working class can spend their week-ends. All this and more is done for the low income group.

6. Cooperative medical care. Socialization of medical practice in Scandinavia began fifty years ago. The present generation of doctors were born into it and have accommodated themselves to it. I asked a hospital doctor if he was satisfied—his reply was "What else can we do? It would be very difficult to make a private practice in Sweden." To all appearances socialized medicine in the Scandinavian countries is no longer an experiment, and there is no apparent dissatisfaction among the doctors and public. As evidence of the approval of the medical profession we find an over-supply of doctors. It does not appear that the doctors of Sweden are less inclined to prepare thoroughly for their professional careers—on the contrary they are, as a class, well qualified.

My sources of information regarding socialized medicine in Sweden were hospital and district doctors and nurses, ship doctors, commissioners of hospitals and a member of the Swedish Parliament—all these I interviewed on many occasions. In addition I inspected a number of hospitals and the two universities of Sweden—Upsalla and Lund. I give you a resume of my findings for what they are worth. In doing so I am aware that some of the data will not apply equally to all parts of Sweden. Hospitals are supported by municipalities, by districts and counties, not by the national government, hence there is some variation in hospital rules and regulations, as well as in salaries, to nurses and doctors.

Doctors are classified as Hospital Doctors, District Doctors and Provincial Doctors. There are very few independent practitioners in Sweden, and such as are practicing independently are usually men of outstanding reputations. The chief of a department in a hospital, such as the chief surgeon, receives a salary of $3,000-$3,750 a year, and is permitted to engage in private practice from which he may make a sum equal to his salary. His assistant next in rank has approximately half his salary and may also engage in private practice within the hospital. All other members of the hospital staff are paid $125 a year and their keep—they are not permitted to engage in private practice.

District and Provincial Doctors receive a salary of $2,500 a year and may have private practice which, if they live in a good community, may equal their salaries. No doctor is permitted to perform a major surgical or obstetrical operation unless he is on the surgical or obstetrical staff of a hospital. This eliminates major surgery in rural practice.

The fees a doctor may charge are regulated and are very moderate. For the first consultation the charge is $1.75, subsequent consultations 75 cents to $1.25. For a house call the fee is $2.00 to $2.50, plus 10 cents a mile. Doctors must retire at 65 years of age, when they are given a pension amounting to half their salaries. At death of the doctor the surviving widow gets a small pension. Skilled labor is better paid than doctors in Sweden—their income is $3,000 to $4,000. Sweden has a labor government and the unions are politically powerful.

Hospitals are located in all cities and towns of three or more thousand inhabitants. They are commodious, well equipped and immaculate in cleanliness. There is no effort at adornment, everything about them speaks for economy and efficiency. Only about 10 per cent of the beds are in private rooms—the remainder are in wards of two to twelve beds. There is no charge for medical service in the wards. The patient pays 35 to 50 cents a day. No charge is made for laboratory examinations, x-rays, radium, dressings or drugs. Beds in semi-private rooms are $1.00 per day. These rates apply to obstetric service but here the service is extended to cover prenatal care and the post partum period in the home. The mother receives a stipend while incapacitated in the hospital and home, she is given a layette, and a midwife visits her twice a day after leaving the hospital until she is able to work. If she has a job she may put her baby in a day nursery from 7 a. m. to 6 p. m. for 12½ cents a day. If she lives in a cooperative apartment her children are provided with playgrounds supervised by nurses, a kindergarten, play rooms, work-shops, and there are hotels for children when the mother is unable to take care of them. Ten per cent of the rent is deducted for each child up to five children.

Private rooms cost $3.00 per day, including drugs, dressings, laboratory examinations and x-rays. Private cases are expected to give the doctor an honorarium (not a fee) and the amount is standardized. For major operations it varies from $25.00 to $50.00. For obstetric cases (not operated) $8.00 to $15.00, for tonsillectomies $8.00 to $15.00. Where patients live outside the district supporting the hospital the ward rates are double, but not for the private rooms. All wage-earners are given half their wage throughout the period of disability. This covers a period of six months, and if disability is prolonged beyond six months a pension is provided.

Every citizen between the ages of 16 and 66 years must carry health and old-age insurance—half the cost is born by the employee. If the annual income exceeds $1,000 a year the insurance is not applied to the expense of illness. The cost of insurance is $1.25 to $1.50 per month for incomes below $1,000, and $2.50 for incomes above $1,000.

The nurses have three, sometimes four, years training. They pay $30.00 tuition when entering their training. After the first 6 to 12 months they are paid about $7.50 per month and in their second and third years in training they are paid double this amount. In addition they get their keep and uniforms. Private nurses are paid $1.50 for 10 or more hours. There are no rules governing the number of hours on duty for private nursing. The superintendent of a 450 bed hospital visited received a salary of $450.00 and keep. Nurses, like all citizens of Sweden, receive a pension at 65 years. Due to the many hospitals being built there is a scarcity of nurses.

Midwives are delivering 80% of all babies in Sweden. They are trained for two years in maternity hospitals of Stockholm and Gothenburg and are capable birth helpers. A law just passed provides that she shall give her services free to all classes. She receives a salary of 1500 kroner (less than $400.00) per year plus her living quarters and professional equipment. For every case above fifty in a given year she is paid (by the taxpayers) $2.50. In addition she may accept honorariums from her patients.

Medical education in Sweden is a long and expensive process. A period of ten years is consumed from the time of leaving high school to the taking of the examination (the equivalent of graduation in medicine). Hospital doctors take 5 to 7 more years of training, which brings them to 35-40 years of age. The cost of this training is $8,000 to $10,000. No tuition is paid but all other expenses are borne by the student.

All this speaks for Utopia but there is another side of the story. It all costs somebody money. I asked a native of Stockholm who that "somebody" is and she replied: "It is the middle class who are carrying the burden, and we complain bitterly." Taxes in Sweden are high, as are living costs. Only $150.00 of the income is exempted and the tax on the residue begins at 25 per cent. An income of $25,000 calls for a 60% tax. Cost of building and rentals are high because of labor, and Sweden has a labor government. Skilled labor is paid $5.00 to $25.00 a day.

It costs one hospital visited $2.20 a day per bed, and 90% of the beds were filled with patients paying 50 cents a day. Copenhagen, with its 6,000 hospital beds, is paying $4,500,000 a year to make up the deficit. The average cost per bed to the hospitals of the United States is said to be $4.00. Were we, here in Omaha, to operate on the same basis as Copenhagen, but at a cost of $4.00 a day, with a revenue from health insurance of 50 cents a day per bed, it would cost every man, woman and child a total of about $1,500,000 a year and this does not include the payment of half the wage in the period of disability.

THE SCHOOL-CHILD'S BREAKFAST

Many a child is scolded for dullness when he should be treated for undernourishment. In hundreds of homes a "continental" breakfast of a roll and coffee is the rule. If, day after day, a child breaks the night's fast of twelve hours on this scant fare, small wonder that he is listless, nervous, or stupid at school. A happy solution to the problem is Pablum, Mead's Cereal cooked and dried. Six times richer than fluid milk in calcium, ten times higher than spinach in iron, and abundant in vitamins B_1 and G, Pablum furnishes protective factors especially needed by the school-child. The ease with which Pablum can be prepared enlists the mother's co-operation in serving a nutritious breakfast. This palatable cereal requires no further cooking and can be prepared simply by adding milk or water of any desired temperature. Its nutritional value is attested in studies by Crimm et al who found that tuberculous children receiving supplements of Pablum showed greater weight-gain, greater increase in hemoglobin, and higher serum-calcium values than a control group fed farina.

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EDITORIAL

MEDICAL ECONOMICS, A NON-SPECIFIC ILL

In this issue of the Journal we submit the recommendations made to the National Health Conference in Washington July last by the President's Interdepartmental Committee. There is also a statement of the Reference Committee of the House of Delegates of the American Medical Association at the last special session of this body. This statement tends to interpret the recommendations in the light of professional and public welfare.

We cannot think of a more important problem for the physicians of this country to study than is the problem depicted in these discussions. We are both impressed and bewildered by the implications of the medical economic situation as it exists today.

The abstracts from Dr. Leland's talk on Page 432 reminds us of the treacherous organic diseases for which there are many procedures and no direct cure.

There are in the offices of the American Medical Association over thirty-five hundred plans tending to alleviate the problem of personal medical care. This indicates a non-specific effort, judged by the results as well as by the theory of the axiom that multiplicity of procedures means absence of direct cure. The fact that there are so many plans simply illustrates the complexity of the whole problem. However, as in the case of the troublesome non-specific diseases, we cannot afford to follow the system of expectant waiting. It is important for us as a profession to give thorough study to the problem and perhaps utilize the experimental effort to correct the difficulties as we recognize them.

At a recent meeting of the Omaha-Douglas County Medical Society, Dr. George Covey and Dr. E. W. Rowe, discussing a paper on medical economics by Dr. Roy Fouts stated that it would be advisable for the Nebraska State Medical Association to pay strict attention to the possibilities of a procedure to simplify the complexities of the present medical economic system. Dr. Rowe and his Committee on Planning are already studying the problem, and it is sincerely hoped that the profession at large will give this Committee its support in whatever recommendations it may make.

THE VITAMINES

Last year there were published more than one thousand scientific papers dealing with vitamines. To some this large number of articles spells great interest in an important subject. To others, unfortunately it brings confusion. Both reactions are justified. That these accessory food factors deserve the consideration they are receiving no one with a respect for the science of nutrition and an appreciation of the results of this work to promote the welfare of the human race can deny. On the other hand the commercial and pseudo-scientific ballyhoo connected with the application of the vitamines to human needs has greatly interfered with their universal acceptance by the profession. Neither the multiplicity of brands nor the exaggeration of their curative value for ills to which they do not apply is an asset to their use.

Yet there is enough legitimate evidence in the literature to warrant the more extensive utilization of vitamines in the daily menu. Not only are the gross deficiency of diseases far from extinct, but there are undoubtedly millions of people on the borderline of health who suffer from hypovitaminosis of varying degree. It is not likely that the modern superrefining of our natural foods leaves these important factors unaltered. This problem has long been recognized by the pediatrists who advise routinely the addition of vitamines from sources other than those found in the regular dietary of the growing child. It is no mere coincident that we now are beginning to see signs of improved physical constitution in the younger generation. The cod liver oil and orange juice are showing their effects.

THE SPEAKERS' BUREAU

(A CORRECTION)

Our President, Dr. Homer Davis, in the last issue of the Journal inadvertantly stated that the Speakers' Bureau was organized through the efforts of our national headquarters for the purpose of supplying speakers for the maternal and child health program. The statement was also made, unintentionally, we are sure, that the Speakers' Bureau office is maintained under the Maternal and Child Health budget. Actually, this bureau is functioning through the set-up of the Nebraska State Medical Association. Below is printed an item, which explains the origin and purpose of the Speakers' Bureau.

NEBRASKA STATE COUNCIL ON MEDICAL EDUCATION

(From The Nebraska State Medical Journal, September 19, 1936, Page 346: It explains the origin and purposes of the Speakers' Bureau).

"The increasing number of activities of the State Association, together with a realization that an effort of education, not only of our own members, but of the lay public is expected, justifies the coordination and the dissemination of all educational phases of this association through some source.

Furthermore, it has become evident that outlets can or should be provided for this dissemination of correct medical information and must be controlled through legitimate channels."

"Pursuant to the wishes of the President, Dr. Geo. W. Covey, the Council on Medical Education met in Omaha, Tuesday, June 23rd, 1936 and organized.

The following policies were tentatively agreed to:

1. That a faculty from among members of the Nebraska State Medical Association be organized. Each to prepare addresses upon:

(a) Specific medical subjects for use in prescribed post-graduate courses.

(b) General discussion for use in district and county medical societies.

(c) Lay talks for use in Parent Teachers Associations, dinner clubs, and general lay medical groups.

2. That the above council will, where desired, act as editorial critic and advisor to the members of this faculty in the final preparation of their addresses.

3. That wherever agreeable the results of all, or part of the special investigative committee becomes a part of the above programs.

4. That the activities of this Council, whereever and whenever possible, unite with national or governmental units, such as the State Board of Health, the American Society for the Control of Cancer, and the National Tuberculosis Society."

In the same issue there appears also a diagrammatic sketch of the organization of the Council on Medical Education, outlining its various activities. In the center of this we find the Speakers' Bureau whose functions are illustrated by a listing of its various activities. This diagrammatic representation clearly illustrates that the Speakers' Bureau is one of the functions of the whole central committee now known as the Committee on Public Health and Medical Education. The purposes of this Speakers' Bureau are clearly defined as follows:

"1. Committee on radio activities with authority of censorship.

2. Committee on programs, medical and lay, with authority of censorship over the latter—to advise with what must be a close hookup between the chairman of the Council, the Executive Secretary of the State Medical Society and the Chairman of the Speakers' Bureau. It is suggested that the Council appoint one or two physicians in each councillor district to act as laison representativese, who will advise with the aforementioned subcommittees."

The Maternal and Child Health program is an activity of the Nebraska State Health Department under the supervision of the Director of Health. The Speakers' Bureau of the Nebraska State Medical Association merely aims to cooperate with the director of health in correlating and coordinating the activities of the Maternal Child Health Committee. It has no financial backing from the budget allotted for maternal and child health by the State Health Department. The Speakers' Bureau is, as may be seen from these abstracts, a State Medical Association activity conceived, organized, and sponsored by our Association, and functioning under the auspices of this same Association. Its object remains to aid County and District medical societies in planning their scientific programs, and where so requested by these societies, likewise aid the various communities over the state in putting on lay educational programs to stimulate wholesome medical thought.

Bids have been opened for the construction of a one hundred twenty-five thousand dollar new wing to the State Tuberculosis Hospital in Kearney. The new addition, it is expected, will be ready for occupancy by January 1.

ANNOUNCEMENTS

The regular Quarterly Meeting of the Business Committee will be held in the headquarters office, 416 Federal Securities Building, Lincoln, Nebraska, on Thursday, November 10. Meeting will start at four o'clock in the afternoon.

This official notice is published in the Journal so that any of the members who might have matters to be presented to this Committee may do so at this time.

Geo. W. Covey, M. D., Chairman.

* * * * * *

The American Board of Obstetrics and Gynecology will hold its oral, clinical and pathology examinations in St. Louis on May 15 and 16, 1939, immediately prior to the Annual Meeting of the American Medical Association.

* * * * * *

The Third Congress of the Pan-Pacific Surgical Association is to be held in Honolulu, September 15 to 28, 1939. An invitation is extended to all surgeons of your Association to meet in Honolulu outstanding men from countries of the Pacific area, including Australia, New Zealand, China, Japan, Java, Canada, United States, for an interchange of surgical thought and for the purpose of bringing about better understanding through personal contact among the surgeons of these countries.

There will be sections in fractures and orthopedics, general surgery, gynecology, motion pictures, neuro-surgery, opthalmology, otolaryngology, all headed up by outstanding men as chairmen for the United States and equally prominent men as chairmen for the Australasian section.

The next Annual Assembly of The Nebraska State Medical Association will be held in Grand Island on May 2, 3 and 4, 1938. If you wish to read a paper before this Assembly, please communicate at once with Dr. R. B. Adams, at 416 Federal Securities Bldg., Lincoln, Nebr.

WOMAN'S AUXILIARY

Dear Hygiea Chairman:

This is the time of year for you to be formulating your plans for the annual sale of Hygiea in your county and to get your campaign well under way. Let us remind ourselves again that it was the doctors themselves who made the sale of Hygeia the particular obligation of the Woman's Auxiliary in a resolution adopted at the Philadelphia Session of the American Medical Association in 1931. This year though, Nebraska's obligation is greater than ever before, for honored as we are by having our National President, Mrs. C. C. Tomlinson, a Member of our State Auxiliary we should give her our full support and endeavor to make this state lead all others in the country.

It is unnecessary for me to try to "sell" Hygeia to you as we are all convinced now of its value—the value of having a Health Magazine sponsored by the American Medical Association in which are given the real truths of medicine—its value to mothers and teachers and as an aid to program making for schools and clubs.

Some auxiliaries follow the plan each year of appropriating funds for the placing of complimentary subscriptions. This distribution of Hygeia subscriptions to schools, local library units and Parent Teachers Association groups is further valuable as a worthwhile Public Relations Contact.

The rates this year are the same as for 1937-1938:

	Rate	Comm.	Remit to Hygeia
One-year subscription	$2.50	$1.25	$1.25
Two-year subscription	4.00	1.50	2.50
Three-year subscription	5.00	1.75	3.25
Introductory offer (For new subscribers)			
Six-month subscription	1.00	.35	.65

A 64-page book "Answers to Popular Health Questions" will be given with every cash subscription.

A contest will be held again this year during December and January. Information regarding this will come to you directly from our National Chairman, Mrs. James D. Lester, of 208 21st Avenue South, Nashville, Tennessee.

For supplies and sample copies of Hygeia write to the headquarters in Chicago, American Medical Association, 535 North Dearborn Street. An interesting loan exhibit of Hygeia for group meetings is also available there.

In closing, let me quote our President, who has referred to Hygeia as the "torch which every doctor's wife would do well to carry among those she seeks to enlighten."

With best wishes to you all, I am

Yours very truly,

Olga Metz Davis,
(State Hygeia Chairman)

NEWS AND VIEWS

Nebraskans attending the Annual Session of the Central States Obstetrical Society in Minneapolis early in October were: Drs. D. H. Morgan and Elmer Hansen of Lincoln, Swanson of Hastings, Harley Anderson, Palmer Findley, David Findley, Ralph Luikart, Charles Moon, Leon McGoogan, P. Redgwick, Earl C. Sage and W. H. Taylor, of Omaha.

The following is a list of surgeons from Nebraska registered at the Congress of the American Association of Railway Surgeons in Chicago in September: Merton C. Arnold, St. Paul; Alfred Brown, Omaha; Arnold G. Burnham, Bridgeport; J. P. Gilligan, Nebraska City; R. C. Gramlich, David City; R. K. Johnson, Friend; John R. Nilsson, Omaha; Roland B. Reed, McCook; George B. Salter, Norfolk; A. A. Smith, Hastings; J. W. Smith, Albion; Lucien Stark, Norfolk; Frederich F. Teal, Lincoln; J. M. Woodard, Aurora.

According to the Lincoln Star Dr. D. B. Moss, chief medical officer of the Burlington who retired after 40 years of service will be succeeded by Dr. O. H. Horrall, general surgeon and Dr. R. B. Kepner as medical officer, President Budd announced Monday.

Dr. H. Winnett Orr of Lincoln was one of the speakers at the Medical Alumni Reunion at Ann Arbor on Friday, September 30th. About six hundred medical alumni registered at Ann Arbor for this reunion, nearly all of the classes from 1886 to the present time being represented by one or more members.

Of the class of 1899, of which Dr. Orr was a member, three members returned for this occasion. Dr. Orr spoke at the noon day Round Table discussion on "The Use of Splints as Therapeutic Agents following Infantile Paralysis" and his formal address later in the day was on "The Prevention and Cure of Infection and Septicemia Following Injuries and Surgical Operations."

Dr. John R. Nilsson, Omaha, chief surgeon of the Union Pacific was reelected a member of the board of directors for three years.

Dr. R. S. Russell of Sutherland has been made a fellow of the American College of Surgeons recently.

Dr. R. R. Best of Omaha spoke before the Minneapolis Surgical Society and also before the students at the University of Minnesota Medical School on October 6.

Neil Morrison, of Fairbury, an optometrist, was placed under arrest on Oct. 6 on a charge which involved his writing a prescription for eye treatment. The prescription was filled by a local drug store and was found to contain zinc sulphate. The defendant pleaded guilty on Oct. 19 before the county judge and was fined $10 and costs.

A PREMATURE BABY STATION

The Lincoln General Hospital has purchased the second page of the cover of this issue of The Journal to announce to the profession the opening of their new Premature Baby Station.

This is the only Premature Baby Station in the state and is made possible by the Cooper Foundation and the cooperation of the Lincoln Junior League. It has been located in the Pediatric Department of the hospital and is entirely separate from the Obstetrical Department.

At the present time the station is equipped with two Hess beds complete with Oxygen Therapy attachments. It is planned to add four more beds at a later date, and any other equipment which may seem to be necessary.

Any regular physician is invited to bring his patients to this station, and may care for them himself under the general rules of the hospital, or he may select another physician if he so wishes. This ruling is made in order that physicians who are not staff members of the hospital may have access to the station for their patients. It is also a convenience for physicians and patients in nearby towns where such equipment is not available. Nursing services will be furnished by the hospital.

This station is open for inspection by the medical profession at any time.

THE TEN-YEAR PROGRAM

Submitted by the Interdepartmental Committee in Washington to the National Health Conference, July 18, 1938.

Ia—Public Health

1. Extend and modernize our basic health services. As things stand, half of the state departments are lame in staff and equipment. Only a third of the counties and even a smaller fraction of the cities employ full time professional health officers.

2. Come to grips with four great threats to life which can be practically eradicated by programs of proper magnitude—tuberculosis, venereal diseases,

malaria and certain occupational hazards. Cut down deaths from pneumonia and cancer; and reduce morbidity from mental disorders.

Ib—Maternal and Child Welfare

Get help through to the homes of America, with the prospect that 70,000 mothers and babies might be saved each year if we seriously set out to save them. There are 90,000 deaths a year under fifteen years of age. With these as spurs to our efforts, build on the gains already made under the social security act and expand our services for mothers, children and crippled children.

II—Hospitals

Cover the country for the first time with these workshops for medical practice; and meet half the maintenance charges the first three years for the new construction. Today we have "insufficient institutions and beds, improper location, incomplete services and inadequate financial support." Provide 180,000 new beds in general hospitals (including 500 hospital, health and diagnostic centers in rural districts); 5,000 new beds in tuberculosis sanatoria; 130,000 new beds in mental hospitals. Make these hospitals agencies for case finding, centers for diagnosis and treatment to be used jointly by physicians and public health agencies.

(The committee urged that I and II be given priority in any national program more limited in scope than that outlined in the entire series of recommendations).

III—The Medically Needy

Project a program of federal-state cooperation to provide minimum medical services to twenty million people without private income, already receiving public assistance in one form or another; and to twenty million more, so close to the emergency level that they can purchase medical care only at the risk of curtailing food, clothing, shelter and other essentials of life. Among these forty million people, eight million may be expected in the course of a year to experience disabling illness of at least a week's duration. Without such a program two million of these cases will go unattended. Many communities and some whole states are unable to support such minimum medical services. The charity of private physicians and the resources of voluntary institutions is inadequate to meet the need.

* * *

Under each of these heads, the committee suggests a ten-year program, decentralized, with the states responsible for administration and with federal grants meeting 50 per cent of the cost on the average; operations to begin in a small way and to reach a peak of maximum annual expenditures as follows:

	Millions	Millions
Ia Public Health	$200	
Ib —Maternal and Child Health	165	365
II —Hospitals		146.05
III—Medically Needy	400	
(Less duplication with Ib)	60	340
		$851.05

The Proposed Insurances

In two concluding recommendations, the Technical Committee on Medical Care gets down to our primary concern with the care and the consequences of the everyday diseases responsible in large part, every day of the year, for the disabling illness of from four to six million persons. In 1929 the total expenditures in the United States for all kinds of health and sickness services are estimated at $3,700,000. Of this national bill, philanthropy and industry met 7 per cent, the government 14 per cent, and patients 79 per cent—or four-fifths of the total.

IV—A General Program of Medical Care

The committee here centers especially on the broad belt of the population which is self-sustaining—but self-sustaining only up to the point where a serious operation or long continued illness puts them on the shelf.

Food, shelter, clothing can be budgeted by the individual family; but medical care will never be made available to all families with small or modest incomes at costs they can afford, unless those costs are spread among groups of people and over periods of time.

Three ways are open to redistribute the costs—through the use of taxation, insurance or a combination of the two. "Experience in many countries suggests health insurance for urban and industrial areas, and public medical services for rural and agricultural areas."

Insurance would call for total funds equal to 4 or 4½ per cent of income of the covered population—obtained from the insured persons with assistance from employers and the government. So far as patients go, this would not represent new expenditures but the substitution of average for variable and unpredictable costs. At the same time the principle of group risk and group payment operates also to stabilize and increase the incomes of those who furnish the service.

In the opinion of the Technical Committee, the federal government should principally give financial and technical aid to the states in their development of sound programs; the choice of method, or combination of methods, should be made by the states.

V—Disability Compensation

The wage loss each year due to sickness disability amounts to from one to two billion dollars. The worker "does not know whether an illness will be mild and non-disabling, or severe and disabling; whether disability will last a day, a week, a month, a year or the remainder of the individual's lifetime." If he is unemployed because he is out of a job, a wage earner can look to unemployment compensation; but there is no protection of that sort if he is unable to work through illness.

The committee strongly recommends that we close in on this gap and develop programs of disability compensation. For roughly one per cent of wages, temporary sickness could be covered up to twenty-six weeks and patterned after unemployment compensation. For a somewhat similar percentage, permanent disability compensation, patterned after old age insurance, could pick up where the other leaves off.

In conclusion, the committee states:

"In good times and in bad times, sickness is a major cause of poverty, destitution and a large part of all dependency . . . It occurs more frequently and for longer periods among the unemployed than among the employed, among the poor than among the rich. It is associated with various other manifestations of social disorganization such as unemployment, low income, poor housing, and inadequate food. If we are to lessen destitution and poverty, if we are to penetrate to the causes of dependency, we must strike simultaneously at this whole plexus of social evils within our society . . ."

—From Survey Graphic, September, 1938.

Report of Reference Committee on Consideration of the National Health Program, Sept. 17, 1938

Dr. Walter F. Donaldson, Chairman, presented the report of the reference committee, which, as amended, reads as follows:

Since it is evident that the physicians of this nation, as represented by the members of this House of Delegates convened in special session, favor definite and decisive action now, your committee submits the following for your approval:

1. Under Recommendation I on Expansion of Public Health Services: (1) Your committee recommends the establishment of a federal department of health with a secretary who shall be a doctor of medicine and a member of the President's Cabinet. (2) The general principles outlined by the Technical Committee for the expansion of Public Health and Maternal and Child Health Services are approved and the American Medical Association definitely seeks to cooperate in developing efficient and economical ways and means of putting into effect this recommendation. (3) Any expenditures made for the expansion of public health and maternal and child health services should not include the treatment of disease except so far as this cannot be successfully accomplished through the private practitioner.

2. Under Recommendation II on Expansion of Hospital Facilities: Your committee favors the expansion of general hospital facilities where need exists. The hospital situation would indicate that there is at present greater need for the use of existing hospital facilities than for additional hospitals.

Your committee heartily recommends the approval of the recommendation of the technical committee stressing the use of existing hospital facilities. The stability and efficiency of many existing church and voluntary hospitals could be assured by the payment to them of the costs of the necessary hospitalization of the medically indigent.

3. Under Recommendation III on Medical Care for the Medically Needy: Your committee advocates recognition of the principle that the complete medical care of the indigent is a responsibility of the community, medical and allied professions and that such care should be organized by local governmental units and supported by tax funds.

Since the indigent now constitute a large group in the population, your committee recognizes that the necessity for state aid for medical care may arise in poorer communities and the federal government may need to provide funds when the state is unable to meet these emergencies.

Reports of the Bureau of the Census, of the U. S. Public Health Service and of life insurance companies show that great progress has been made in the United States in the reduction of morbidity and mortality among all classes of people. This reflects the good quality of medical care now provided. Your committee wishes to see continued and improved the methods and practices which have brought us to this present high plane.

Your committee wishes to see established well coordinated programs in the various states in the nation, for improvement of food, housing and the other environmental conditions which have the greatest influence on the health of our citizens. Your committee wishes also to see established a definite and far reaching public health program for the education and information of all the people in order that they may take advantage of the present medical service available in this country.

In the face of the vanishing support of philanthropy, the medical profession as a whole will welcome the appropriation of funds to provide medical care for the medically needy, provided, first, that the public welfare administrative procedures are simplified and coordinated; and, second, that the provision of medical services is arranged by responsible local public officials in cooperation with the local medical profession and its allied groups.

Your committee feels that in each state a system should be developed to meet the recommendation of the National Health Conference in conformity with its suggestion that "The role of the federal government should be principally that of giving financial and technical aid to the states in their development of sound programs through procedures largely of their own choice."

4. Under Recommendation IV on a General Program of Medical Care: Your committee approves the principle of hospital service insurance which is being widely adopted throughout the country. It is susceptible of great expansion along sound lines, and your committee particularly recommends it as a community project. Experience in the operation of hospital service insurance or group hospitalization plans has demonstrated that these plans should confine themselves to provision of hospital facilities and should not include any type of medical care.

Your committee recognizes that health needs and means to supply such needs vary throughout the United States. Studies indicate that health needs are not identical in different localities but that they usually depend on local conditions and therefore are primarily local problems. Your committee therefore encourages county or district medical societies, with the approval of the state medical society of which each is a component part, to develop appropriate means to meet their local requirements.

In addition to insurance for hospitalization your committee believes it is practicable to develop cash indemnity insurance plans to cover, in whole or in part, the costs of emergency or prolonged illness. Agencies set up to provide such insurance should comply with state statutes and regulations to insure their soundness and financial responsibility and have the approval of the county and state medical societies under which they operate.

Your committee is not willing to foster any system of compulsory health insurance. Your committee is convinced that it is a complicated, bureaucratic system which has no place in a democratic state. It would undoubtedly set up a far reaching tax system with great increase in the cost of government. That it would lend itself to political control and manipulation there is no doubt.

Your committee recognizes the soundness of the principles of workmen's compensation laws and recommends the expansion of such legislation to provide for meeting the costs of illness sustained as a result of employment in industry.

Your committee repeats its conviction that voluntary indemnity insurance may assist many income groups to finance their sickness costs without subsidy. Further development of group hospitalization and establishment of insurance plans on the indemnity principle to cover the cost of illness will assist in solution of these problems.

5. Under Recommendation V on Insurance Against Loss of Wages During Sickness: In essence, the recommendation deals with compensation of loss of wages during sickness. Your committee unreservedly endorses this principle, as it has distinct influence toward recovery and tends to reduce permanent disability. It is, however, in the interest of good medical care that the attending physician be relieved of the duty of certification of illness and of recovery, which function should be performed by a qualified medical employee of the disbursing agency.

6. To facilitate the accomplishment of these objec-

tives, your committee recommends that a committee of not more than seven physicians representative of the practicing professsion, under the chairmanship of Dr. Irvin Abell, President of the American Medical Association, be appointed by the Speaker to confer and consult with the proper federal representatives relative to the proposed National Health Program.

Respectfully submitted,

WALTER F. DONALDSON, Chairman.
WALTER E. VEST.
H. A. LUCE.
FRED W. RANKIN.
FREDERIC E. SONDERN.

PLANS FOR MEDICAL CARE IN THE UNITED STATES

According to the Bureau of Economics of the American Medical Association there are in the United States:

1. *State and County Medical Society Plans*—152 operating; 80 proposed. Plans to care for indigent sick—108 operating, 39 proposed. These arrangements follow either a per capita fee schedule or a lump sum per stated period.

Post-payment plans, 27 operating; 27 proposed.

Pre-payment plans, 17 operating; 14 proposed. All involve free choice of physicians. Doctors usually serve on a pro rata basis according to the services involved. (Georgia, Oregon, Utah, Washington).

2. *Group Hospitalization Plans*—78 operating; 62 proposed. Administered by organized hospital councils with cooperation of Medical Societies. On prepayment basis.

Hospital Insurance Companies, 54 operating. Assessment basis or regularly established insurance companies, stock or mutual, in connection with health and accident contracts.

Flat Rate Plans, 19 operating. Fixed rate plans offered by hospitals in various communities on specific conditions. (Obstetrics at a stipulated flat rate).

Industrial Medical Care Plans—At least 2,000 in operation. Usually financed by employers to provide emergency care and to supervise plant hygiene and safety conditions. The scope of this type of service varies widely in different sections of the country and also in different types of industry. Some of these services are paid for by the employees on a pay deduction basis.

Medical and Hospital Benefit Organizations—At least 500. These include a variety of arrangements for obtaining funds and usually involve the worst types of contract practice.

Union Sick Benefit and Fraternal Plans, at least 24. Lodge practice. The organization enters into a contract with one or a few physicians to supply meager service at a meager quarterly stipend from the lodge.

Group Practice Plans—At least 300 in operation. Only a small percentage of such groups of physicians have entered into arrangements to provide patients with medical services on a prepayment basis.

Student Health Services—At least 300 operating.

Organizational arrangements in colleges and universities to supervise and protect the health of the students on campus through entrance examination, consultations, infirmary care, instruction in hygiene and control of communicable disease.

Rural Medical Care Plans—

(a)—"Health Associations" organized by a group of residents to guarantee a physician an annual income as an inducement to locate in the community. Only 5 such "associations" are known to the Bureau.

(b)—Farm Securities Administration plans to provide medical services for low income or destitute farm families. In a few states F. S. A. clients have organized to hire physicians to render care. In most states, however, the F. S. A. has provided loans to enable their clients to pay reduced rates on a fee basis.

Credit and Collection Bureaus—At least 50 operating, 25 proposed.

These are organized by medical societies or by groups of physicians to provide credit rating and collection service for members. Some arrange for post payment of medical bills similar to medical-dental service bureaus.

THE PLANNING COMMITTEE

The Planning Committee of the Nebraska State Medical Association has carefully considered the 'State Plan" of "The Nebraska Crippled Children's Service," as prepared by Mr. Harry Becker, Director. It shows great progress in the organization of a program for Nebraska's Care of Crippled Children. The improvement and plans for the future are to be highly commended.

The committee offers several pertinent suggestions which it believes will improve the service and strengthen the contacts with the medical profession as well as the removal of certain official friction in the counties from which the individual cases arise.

These recommendations are:

1. There should be a re-definition of the

meaning of the "medically indigent crippled child," both from the administrative and statutory standpoint. The meaning should be very definitely limited to the crippled child and not so broadened that any ailing child may be included. Also the medical indigent should mean the child who has a standard of living, including food, shelter, clothing and financial resources, that is below certain definite recognizable limits. This will leave the child with adequate financial resources in the local community to seek its own medical advice and hospital care. Also, limiting the cases to the crippled child gives the Department more ample facilities, for it is now prepared to handle in an adequate way nearly all orthopedic cases. But it cannot without great expense care for a wide variety of impairments and furnish medical care comparable to that given in private practice. Those who are unable to pay for this specialized service because of low income, or exhausted credit and resources, after careful investigation, are entitled to this service.

2. There should be a Medical Advisory Committee, appointed to serve without pay, from the Nebraska State Medical Association. This committee should not be from the staff employed by the State. It might well be a sub-committee of the present Medical Advisory Committee of the Board of Control, as now provided.

3. The Legislature must make provision by law to require the local responsible authorities, now the County Commissioners, to assume responsibility for the cost of medical examination and other expense before the case comes under the Department's care, and, when necessary, after the case is sent home. This expense covers not only medical care but it also includes food, clothing, shelter and transportation. They now have the authority but do not comply or cooperate.

4. The Crippled Children's Department should look forward to an early change to the Department of Health, as a bureau. This will prevent overlapping and lead the way for the integration of various correlated bureaus now existing. It is the logical place for all health activities, practiced in many States, and recommended by the United States Public Health Service.

5. Approval contingent upon acceptance of these recommendations by Department.

Respectfully submitted by,

Committee on Planning,
Nebraska State Medical Association,
E. W. Rowe, M. D., Chairman,
F. L. Rogers, M. D.
W. C. Becker, M. D.

THE CRIPPLED CHILD

The Nebraska law defines a crippled child as follows:

a. Laws of Nebraska, Special, 1935: Chapter 30, Section 4: "a child shall mean a person actually or apparently under the age of 16 years for the purpose of this act." Sub-Section G: "A physically handicapped or crippled child shall mean a child who, by reason of a physical defect or infirmity, either congenital or acquired by accident, injury or disease, is or may be expected to be totally or partially incapacitated for education or for remunerative occupation but shall not include the deaf and the blind.

b. Laws of Nebraska, 1937: Chapter 190, Section 4: "that for all purposes of this act, a crippled child is one under 21 years of age, unmarried and of sound mind, afflicted with hare lip, cleft palate, hernia, congenital cataract or disability resulting from congenital or acquired heart disease or any congenital abnormality or orthopedic condition than can be cured or materially improved. The orthopedic condition or deformity referred to above shall include any deformity or disease of childhood generally recognized by the medical profession, and shall include deformity resulting from burns. It shall not include recent fractures except those sufficiently severe or complicated as to likely result in permanent deformity or disability, or ordinarily preventable when treated in their incipiency."

An administrative definition of a crippled child has been prepared to limit the children accepted under the plan to those afflicted with the types of crippling conditions which can be handled adequately with the facilities Crippled Children's Service funds permit. The General Advisory Committee has recommended the following administrative definition: "In selecting children for hospitalization, professional services, convalescent and other care, preference should be given to children under 16 years of age who are suffering from orthopedic conditions offering obvious promise of recovery or improvement to whom shall be given as complete medical and social service as possible." The official State agency accepted this recommendation in June, 1937, giving it the force of rule and regulation. The plan of operation provides that children under the age of 21 will be accepted, however, preference will be given to children under the age of 16, who are suffering from orthopedic defects. Other types of crippling conditions will be accepted as funds and facilities permit; for example: children suffering from cleft palate, hare lip, oxstrophy of the bladder, burns, and a few selected cardiac and diabetic cases. Endocrine disturbances and other types of medical care problems may be given care and treatment at the Orthopedic Hospital, however, money for these cases will not be made from Crippled Children's Services funds. The official State agency will not attempt to give medical or hospital services at this time to children suffering from common types of hernia and other types of defects and diseases which properly fall in the area of general medical care and provided for from county funds, under the State Poor Relief, and Public Assistance laws.

Requirements for state plan under Social Security Act. (Sec. 513 (a), (1)).

Financial participation by the State: Laws of Nebraska, 1937: Chapter 181, Section 8, appropriated from the State Assistance fund, $93,000 for the biennium beginning July 1st, 1937, for Crippled Children's Services. Under the statute, and rules and regulations of the State Treasurer, no less than $46,500 will be available for the fiscal year beginning July 1st, 1938, and ending June 30, 1939. In addition to this amount the Board of Control, from the general appropriation, made to it under the Nebraska Laws, 1937; Chapter 193, has appropriated $110,398.85 for biennium for the use of the State Orthopedic Hospital.

As much of this appropriation as is needed to match available Federal funds may be used by the Child Welfare Division of the Board of Control. The official State agency is not requesting Federal matching for any sums of money other than those appropriated or made available to the Board of Control by the State legislature for services to crippled children. Private and local funds are available for services to crippled children but administrative control of these monies is not the responsibility of the official State agency. Private and local programs for the care of crippled children are closely coordinated and in some instances integrated with the State program.

Official State Agency (Sec. 513 (a), (2)): The Board of Control is the official State agency with final administrative responsibility for Crippled Children's Services in Nebraska. The Board of Control has delegated through its Executive Secretary (also known as Director of Assistance), the administration of Crippled Children's Services to the Director of the Child Welfare Division, a division in the Department of Assistance and Child Welfare. The Board of Control is a bi-partisan administrative board of three members who serve for six-year overlapping terms. One member is appointed by the Governor every two years. The Board of Control is a constitutional agency created originally to direct the State institutional program. In May, 1937, the legislature placed with the Board of Control the responsibility for supervision of the local administration of public assistance (Old Age Assistance, Blind Assistance, and Aid to Dependent Children) and the administration of State Child Welfare services, as well as Federal Child Welfare Services and Crippled Children's Services. The Governor appoints for the period ending upon the first Thursday after the first Tuesday in January, 1939, and until his successor shall be appointed and qualified, and in January, 1939, and every two years thereafter, a Director of Assistance," who is Executive Secretary to the Board of Control for the assistance and welfare services mentioned above and Director of the Department of Assistance and Child Welfare. The Board of Control appoints the staff. The Child Welfare Division of the Department of Assistance and Child Welfare is an administrative department not established by statute. The Child Welfare Division Director is responsible for Crippled Children's Services to the Board of Control through the Director of Assistance.

Methods of Selection: Personnel is selected by the Board of Control on recommendation of the Director of the Child Welfare Division. All professional staff members are selected on the basis of their professional qualifications which must include membership in the national association of their respective fields. The only exceptions to this policy are the two graduate nurses employed on the administrative staff and the assistant worker at the Orthopedic Hospital. When this standard for personnel was selected it was after careful consideration by the General Advisory Committee and the Technical Sub-Committee. These standards have been effective since the first Crippled Children's Services plan was approved by the U. S. Children's Bureau.

Activities: Activities of official State agency: Locating Crippled Children: Laws of Nebraska, 1937, Chapter 190, Section 5, provides for reporting to the Child Welfare Division by the attending physicians, of children who at birth have visible congenital deformities. This law is not being administered at the present time. Several plans are under consideration by the General Advisory Committee. After a plan is recommended by the General Advisory Committee and the Technical Sub-Committee has made its recommendations, efforts will be made to cooperate with the State Health Department in working out this provision of the law. The same statute (Section 6) provides that the State Department of Public Instruction shall require the County Superintendents of Schools to instruct the school census enumerators to register each crippled child from birth to the age of 21 years. This enumeration is to show the name of the child, birth date, sex, race, residence of parents or guardian, and a brief statement of the child's physical condition and the causes of this condition when known. This census was taken the past year and the names of crippled children reported given to the Child Welfare Division.

The District Child Welfare Consultants regularly contact the County Superintendents of Schools and the city school officials to inquire concerning children who are in need of Crippled Children's Services. They also discuss Crippled Children's Services with local physicians, interested groups and individuals, as well as with local welfare authorities. All crippled children known in relief families are automatically reported by the local County Assistance Director. Several times during the year the physicians in the State are sent information regarding the method of referral for children needing Crippled Children's Services. Quarterly news releases to all newspapers in the State give statistics and human interest information on crippled children's cases. All children who are known to the Orthopedic Department of the University of Nebraska Hospital and the State Orthopedic Hospital are included in the State register and are referred to the local welfare officials and local physicians to determine if the child's parents are unable to arrange for treatment or care needed.

The Child Welfare Division is setting up a statewide central index through which all agencies working with the children will clear cases.

Development of State Register of Crippled Children: Nebraska maintains a State register of all children known to be crippled. The register is arranged by counties. The alphabetical file of crippled children known to the department is included in the central index file of the Child Welfare Division. The alphabetical card gives only the child's name, parent's name and las address. The active, closed and ineligible cases in the register are indicated by colored tabs. The registration card is used also as a statistical card. The register includes all children under 21 years of age known to be crippled under the administrative definition of the official State agency. Beginning July 1, 1938, names of children who are reported but do not fall in the class, "orthopedic and plastic," will be recorded in this file on a different colored card. The crippling condition indicated on the card is the diagnosis of a licensed physician, usually the local physician. Only the cards tabbed as active cases will be kept up-to-date in the register.

Requirements and Procedures with Regard to Acceptance for Care: No child is considered for care by the State agency until after the child's parent or guardian has made application to the local County Assistance Director for Crippled Children's Services. After the application is received a careful study of the economic and social situation is made by the County Assistance Director. The County Assistance Director is required to obtain a referral from the local physician to whom the case is known before submitting this information to the State office for consideration. If the case is unknown to a local physician at the time the application is made, the county is asked to arrange for medical examination if the child cannot be seen at the out-state clinic. This information is submitted to the State office where the case is reviewed and either accepted or rejected. If on review of a case any doubt exists as to the need for further medical care it is the policy of the department to permit diagnostic examination at one of the out-patient clinics. When the application and supporting data is reviewed in the State office the following is carefully considered:

1. That the child is crippled under the meaning of the administrative definition.

2. That the child is under twenty-one years of age.

3. That the child is not obviously a mentally defective. (When there is doubt as to the intelligence of the child psychological examinations are included in the diagnostic service). No child who is obviously feeble-minded will be accepted for care under Crippled Children's Services or at the Orthopedic Hospital.

4. The child must be a resident of Nebraska or his parents must be residents of Nebraska, (twelve months residence). On a reciprocal basis with other states arrangements will be made by Crippled Children's Services for the care and treatment of children who are non-residents.

The family budget must show a deficit, according to the standards of public assistance in the county of residence. Consideration will be given to marginal families in view of the cost of medical care and the family's ability to pay for such care in the future. Children are accepted for services whose parents are not eligible for public assistance, providing medical indigency is established through the medical social service department. All active cases are rebudgeted and reviewed each quarter.

Clinic Services: There are four types of clinics being planned for the fiscal year ending June 30th, 1939:

(1) Diagnostic, admitting, treatment, and after-care clinic services three days a week at the State Orthopedic Hospital.

(2) Extension clinics to be held as part of the Orthopedic Hospital service to be located in the out-state areas.

(3) Diagnostic and after-care clinics to be held in Omaha for cases in that vicinity.

(4) In cooperation with the Elks Lodge case finding and diagnostic clinics will continue to be held in localities where special need exists.

The clinic at the Orthopedic Hospital is only for those children who are admitted through the social service department after their parents' or guardians' application for services has been acted upon by the medical social service department and the medical supervisor at the hospital. Admission to the clinic does not mean admission to the hospital or treatment under Crippled Children's Services. As complete a diagnostic service as the Orthopedic Hospital staff permits is given at the clinic, including general physical examination, pediatric services when indicated, and psychological and psychiatric consultation can be arranged. Neurological, otorhinolaryngolical, general surgery, dermatology, and genito-urinary specialists are not represented on the Orthopedic Hospital staff. Special plans must be made for these children needing these services. X-ray, and pathology services are available for the clinic and a registered physical-therapist will be employed, if possible by July 1, 1938. One orthopedic surgeon, pediatrician, and hospital superintendent, who is a physician, are in attendance at each clinic. At the large clinics there are two orthopedic surgeons in attendance. A medical social worker is also available for referral or social problems.

The out-state or extension clinics will be handled by an orthopedic surgeon, medical social worker and public health nurse. The clinics will be held at a local hospital and children certified for Crippled Children's Services will be admitted. The clinic will be largely diagnostic for new cases, and aftercare services for cases under treatment. When practical, minor brace adjustment, x-ray, and treatment will be arranged for in the local community. The purpose of the extension clinic is to take services closer to the child's own home thus reducing the cost of transportation. Particular emphasis will be made to interpret to the parents, local physicians, welfare workers, and nursing groups the needs of each crippled child.

Because of the large number of crippled children in Omaha and vicinity a clinic similar to the extension or out-state clinic will be held once a week at one of the Omaha Hospitals. An orthopedic surgeon will be in attendance at this clinic. X-rays, appliances, physical-therapy and minor treatment such as application of casts and cast repair will be done at this clinic. Nursing and follow-up services will be provided by the Orthopedic Division of the Visiting Nurse Association of Omaha.

The public health nurse and the medical social service staff will cooperate with the Elks Lodge in locating children and helping to plan generally the Elks case-finding and diagnostic clinics. The Elks clinics are held by the local lodge and the county medical society. Approximately four clinics will be held during the year.

Provision for diagnostic and treatment other than at hospitals or clinics: No arrangements are being made for diagnosis and treatment services other than as provided through the hospital and Elks clinics.

Hospitalization: (1) Hospitals to be used in the State Plan: Practically all hospitalization is arranged at the State Orthopedic Hospital located at Lincoln, which is approved by the American College of Surgeons as a Class A hospital. This hospital is administered by the official State agency. The private hospital will be used in Lincoln and Omaha for cases which cannot be handled at the Orthopedic Hospital, such as exstrophy of the bladder, harelip, cleft palate, and seriously acute children's diseases which develop while the child is under treatment, and also including children who are operated on by orthopedic surgeons not on the staff of the Orthopedic Hospital. The hospitals approved by the Crippled Children's Services for these cases are the following Class A hospitals:

Name	Location	Support
Bryan Memorial Hospital	Lincoln	Private
Lincoln General Hospital	Lincoln	Private
St. Elizabeth's Hospital	Lincoln	Private
Clarkson Hospital	Omaha	Private
Im. Luth. Deaconess Hospital	Omaha	Private
Methodist Epis. Hospital	Omaha	Private
St. Jos. Creighton Memorial	Omaha	Private

(2) Hospital admission procedures: The child is eligible for consideration for admission to the hospital after the application and supplementary social and economic data has been submitted and certified by the medical social service department of the Child Welfare Division. Decision for hospitalization of children admitted to the hospital is made after the diagnostic clinic. This decision is made by the orthopedic surgeon together with the hospital superintendent (in the case of the Orthopedic Hospital only) and the hospital medical social worker. If any special medical problem is indicated other than orthopedic, the pediatrician is a member of the admitting case committee.

(3) Standards of Hospital Care: The general and technical Sub-Committees have recommended that only hospitals with Class A ratings under the rules and regulations of the American College of Surgeons be used for Crippled Children's Services. In addition to Class A rating a hospital is required to have an orthopedic surgeon and pediatrician on the staff who are certified by the American board of their specialty. The hospital is also required to have available a registered physical-therapist, qualified laboratory and x-ray technician, and pathologist. In addition to the above medical staff there must be available, and preferably on the staff of the hospital, a general surgeon, neurologist, genito-urinary specialist, gynecologist, dermatologist, and otorhinolaryngologist. Although the State Orthopedic Hospital has only the orthopedic and pediatric specialists represented on the staff, men representing the other specialties are called in for consultation when it seems advisable. The hos-

pitals are required to have a competent and adequate nursing staff. Medical records and staff meetings in accordance with the standards for hospital procedure and administration as recommended by the American Hospital Association. Approval by the American College of Surgeons is also required by the official State agency. Those standards have been in effect since July 1, 1937. The official State agency requires a complete physical examination for every child who enters the hospital, including a urinalysis, complete blood count, blood Wassermann, Schick and Dick, tuberculin skin test and vaginal smear for girls. Results of these tests are to be recorded on the child's chart during the first few days of hospitalization. The official State agency also requires that the hospital have facilities for isolation and private room care for patients critically ill, and special nursing services if need requires such services.

PRESS COMMENTS

From the Public Pulse—Omaha World Herald

THE COUNTRY DOCTOR

Blair, Neb.: One is inclined to feel that the glamorous role of the country doctor is a thing of the past. How our hearts filled with glorious pride and awe at the tales of how the country doctor used to travel through mountains of snow in a little old top buggy or on horseback to visit a sick one.

True, the country doctor of today need not plod the weary road as of yore, but rides instead in a shiny new limousine. But is his role less saintly than that of his predecessor? I think not. He is if anything, more practical, his work more efficient than ever before.

There is still the heart interest, the human aspect, to the profession. Nor will anyone deny it who has felt the cool, soothing touch of the family physician's hand on his fevered brow or the kindly pat of cooperation on his shoulder.

How many of us have watched with anxious eye every change of expression on the doctor's face as a loved one was being examined, and how the heavy weight was magically lifted from the heart when a reassuring smile spread over the medical man's face.

No, the old country doctor role is still one wreathed in glory and executed in a spirit of self-sacrifice.

MRS. HANS FRAHM.

From The Journal, Lincoln

FASHIONS IN FOOD

Recently there was submitted at a national health conference in Washington a proposal that the government expend 850 million dollars a year for expansion of public health service and hospital facilities and in medical care for the needy. This is the latest importation from Europe of the social reformers. It is another step toward state medicine, a purely socialistic enterprise that has not had so much success in Europe as to justify its being adopted in this country.

The American Medical association has taken strong ground in opposition on the theory that this will result in setting up a complicated bureaucratic system that has no place in a democratic state. In addition it will be the entering wedge for still larger and heavier dips into the public treasury, and, like WPA, will be used by the politicians to increase their power by their control of the bureaus that choose beneficiaries.

In view of the fact that the facilities of the hospitals now in the country are not being operated at capacity, it would seem that objections to investment of taxpayers money in new hospitals are well taken. The argument, however, has had little force in the past, as witness the millions going into competitive power plants all over the country on the yet to be proved claim that the public is being overcharged by private enterprise.

The association, however, recognizes the trend of the times, which is toward putting stilts under the economically submerged. It points out that the rapid spread of hospitalization insurance has opened the way for middle class persons to insure proper care on a premium paying basis, and recommends that amplication of the local programs of health units would take care of the others, those who can pay neither premium nor medical care expenses. This would leave the physicians with their present freedom, and afford the needy proper medical care at public expense. It would seem wiser to try out this plan.

Editorial from The Star, Lincoln, Sept. 25

A recent publication of the American Medical association showed that hospital facilities are ample in the state to meet all demands. An accompanying map showed that about the only section where there are no hospital facilities is that best known as the sandhills, in an area where only 5 per cent of the population resides. There are two smaller areas in southwestern and northwestern Nebraska that have no hospitals. In addition to those of standard type there are a number of emergency hospitals located here and there, two of them, for instance, in Cass county, These represent either a doctor who has fitted up a few beds or a registred nurse who has similarly equipped her office or home.

SOCIETIES

Omaha-Douglas County Medical Society

The regular meeting of the Omaha-Douglas County Medical Society was held in the Medical Arts Auditorium on Tuesday, September 27, 1938, at 8:00 p. m. President Uren called the meeting to order, and owing to the length of the program, it was moved, seconded and passed that the reading of the minutes of the last regular meeting, May 24, 1938, be dispensed with. The secretary then read the minutes of the Council meeting held at the Elks Club on July 8, 1938, and the minutes of the Council meeting held at the Y. M. C. A., on September 27, 1938.

Dr. Fouts, discussing the resolution by the Council which read, "the Council is not in favor of the plans for a veneral disease clinic as presented in the communication by the Veneral Disease Bureau of the Nebraska State Health Department," offered a motion, which was seconded by Dr. F. J. Wearne, "that the Omaha-Douglas County Medical Society is ready to cooperate with the Nebraska State Health Department if and when the Omaha Health Department sees fit to match the funds required for the project." The motion passed by a standing vote of twenty-seven to twelve.

There being no further corrections or changes, the minutes stand approved as read.

President Uren pointed out the necessity and the importance of each physician filling out and sending in to the Secretary, the A.M.A. survey blanks. These, he stated, are only the means of estimating the distribution of medical care in Douglas and Sarpy Counties.

The scientific program was opened by Dr. Palmer Findley who discussed "State Medicine in Sweden: Observations on Recent Trip Abroad." This was followed by a comprehensive paper by Dr. Roy W. Fouts, "Recent Social and Economic Medical Development in the U. S. A." The discussion was opened by Dr. G. W. Covey, Lincoln, past president of the Nebraska State Medical Association. In Dr. Covey's remarks he brought out the importance of maintaining the doctor-patient relationship, the necessity of improving the distribution of medical service, and the suggestion that some workable plan be submitted to the Planning Board of the Nebraska State Medical Association, for the purpose of administering medical care to the low income group, such plan to be under the jurisdiction of the local societies.

Dr. J. W. Duncan was the next to discuss Dr. Fouts' talk; he also advocated the idea of possible group health insurance under the leadership of the various county societies.

Dr. E. W. Rowe of Lincoln, was of the opinion that the cooperation of every physician is absolutely necessary in order that the medical profession will have a voice in the proposed legislation which is to be brought before the next Congress as a result of the proposals set forth in the National Health program. He further stressed the advisability of informing the public of the ideals and policies of the medical profession, to combat the propaganda of those who are endeavoring to regiment physicians.

Dr. Jay J. Keegan contributed to the discussion by urging that each physician inform himself fully of conditions as they now exist, and recommended the reading of the article, "Health Ahead" in the September issue of Survey Graphic, and the proceedings of the special session of the House of Delegates in meeting September 16-17, as set forth in The Journal of the American Medical Association, of September 24.

Dr. Fouts closed the discussion and again stressed the point that it is the duty of every physician to do his share by filling out the survey blank furnished to him, and that it should be the endeavor of the Omaha-Douglas County Medical Society to be 100 per cent in its response.

Meeting adjourned at 10:20 p. m.

Herman M. Jahr, Secretary-Treasurer.

The first fall meeting of the **Lancaster County Medical Society** was held October 4, 1938, with Dr. Clayton F. Andrews, president, presiding. About forty-five members were in attendance.

The first paper of the evening was given by Dr. H. Winnett Orr, entitled, "The Prevention of Deformity in Arthritis." The discussion was confined to the orthopedic treatment of the arthritic joint during the acute stage, and later the chronic stage with deformities. Discussion followed by Drs. C. F. Ferciot and George W. Covey.

The second paper, "Etiology of Bronchiectasis," was given by Drs. E. Korol and H. F. Scott. This paper, illustrated with lantern slides, brought out that atrophy of the bronchi was due to vascular interference (thrombosis of brachial artery or other sclerosis of the arteries). An excellent discussion followed by Dr. F. L. Rogers, E. W. Rowe, R. H. Whitham, and G. W. Covey.

Everett E. Angle, M. D., Secretary.

First fall session of the **Five-County Medical Association** was held Tuesday evening, October 4, at the Stratton hotel in Wayne. Doctors from Cedar, Wayne, Thurston, Dixon and Dakota counties composed the group. From Hartington attendants at the session were Dr. J. M. Johnson, Dr. and Mrs. F. P. Dorsey, Jr., and Mr. and Mrs. J. W. King. Other Cedar countyans present were: Dr. G. E. Peters of Randolph, secretary-treasurer; and Stuart Cook, Jr., also of Randolph and vice-president of the association. Dr. R. P. Carroll and Dr. H. D. Miller, both of Laurel; and Dr. F. G. Dewey of Coleridge. Addressing members of the association were four prominent Sioux City medical men, including Dr. J. N. Lande, who discussed Immunization; Dr. Roy Crowder, Perineal Repair; Dr. R. T. Rowher, Management of the Irritable Colon; and Dr. H. I. Downs, Ulcers of the Stomach.

The **Sixth Councilor District** met in Shelby, Monday, Oct. 10, 1938, dinner being served at 6:30 p. m. The program consisted of an address by W. L. Shearer, M. D., Omaha, who had as his subject, "Problems Confronting the Physician in His Daily Practice." The entire evening was devoted to this important subject. Focal infection was discussed at length.

The **Madison Six County Medical Society** met Tuesday, September 10 in the Hotel Norfolk. Program: Dr. John F. Gardner, Omaha, "The Recognition and Treatment of Some of the More Common Endocrine Disorders"—Illustrated by lantern slides. The committee in charge was Drs. Swift, R. E. Johnson and Carrig.

The eighteenth annual meeting of the **Seventh Councilor District Medical Society** was held in Superior, October 20, 1938, at Hotel Nebraskan. The program was as follows: "The Etiology, Symptomatology and Treatment of Diseases of the Cervix, Exclusive of Those Secondary to Birth Injuries," by R. J. Stearns, M. D., Omaha; "The Etiology and Symptomatology of Injuries to the Birth Canal Due to Birth Injuries,' by H. S. Morgan, M. D., Lincoln; "The Treatment of Injuries of the Birth Canal Due to Birth Injuries," by Maurice Grier, M. D., Omaha.

Rudolph F. Decker, Secretary.

The **Twelfth Councilor District** met in Scottsbluff September 27. The scientific meeting included Drs. T. Leon Howard of Denver, Dr. E. C. Sage of Omaha and Dr. Adolph Sachs, Omaha, who spoke before the assembly. The following officers were elected: Joseph Kuncl, Alliance, president; Paul Q. Baker, Scottsbluff, vice-president, and Leo Hovitt, Chadron, secretary.

The **Madison Six County Medical Society** met at the Hotel Norfolk, Tuesday, September 19. The scientific program consisted of a talk by Dr. John F. Gardner, Omaha, "The Recognition and Treatment of Some of the More Common Endocrine Disorders."

The **Southwest Nebraska Medical Society** held its first meeting of the year at the Keystone hotel in McCook, September 30. Following dinner at 7 p. m. Dr. Howard B. Hunt addressed the group on "Cancer." He was followed by Dr. Charles Baker with a paper on "Chronic Gastritis." Dr. Rodney Bliss concluded the program with a talk on, "Some Interesting Gastrointestinal Cases." All the guest speakers of the evening are from Omaha.

The **Tri-County Medical Society** met in Fremont at the Hotel Pathfinder, September 26. The scientific program was as follows: Dr. M. C. Andersen, Omaha, "The Electrocardiograph in Relation to Heart Disease." Dr. Charles W. McLaughlin, Omaha, "The Acute Surgical Abdomen in Children."

The **Platte-Loup Valley Medical Society** met at Columbus, September 14. The scientific program was conducted by Dr. N. F. Hicken, and Dr. Manual Grodinsky, both of Omaha.

A physician says the reason so many business men die young is that they don't know how to relax. What do they do when they're in conference?

HUMAN INTEREST TALES

Editor:

Regarding your column, "Items of Human Interest," I wish to call your attention to a most unusual experience I had during the last week in July.

Hay Springs has a population of only 859, and yet I delivered six (6) babies in one week; to be exact, one on each of the following days:

Sunday, July 24—girl.
Tuesday, July 26—girl.
Wednesday, July 27—girl.
Thursday, July 28—girl.
Friday, July 29—boy.
Saturday, July 30—boy.

I maintain that this is a record for anyone to compete against. For a small town of this size, it will probably never happen again for a score of years. Incidentally none of the mothers were induced, nor did any of them cause labor to begin by any artificial or therapeutic means.

I trust that this bit of news will be of interest to my colleagues. After such a strenuous week, I am planning on taking a two weeks post-graduate course in surgery at Cook County Hospital in September.

With best wishes and kindest regards, I am

Sincerely yours,
M. F. ANDERSON, M. D.

Dr. and Mrs. E. M. Walsh of Omaha visited Chicago recently.

Dr. E. E. Sweeney, formerly of Elk Creek, has joined the CCC camp.

Dr. H. D. Morgan of McCook visited Halstead, Kansas, in September.

Dr. Edwin Shaughnessy, formerly of Loup City, has moved to Holdrege.

Dr. Walter C. Miller, formerly of Arapahoe, has moved to Portland, Oregon.

Dr. and Mrs. Harold Morgan of Lincoln returned from a motor trip to Canada.

Dr. Edward Thompson of Omaha has returned from a two weeks' vacation in the East.

Dr. Charles H. Root of Bassett was recently reported ill in the hospital at Ainsworth.

We record the tragic death of Dr. Ben Vitou, a recent graduate of Creighton Medical School.

Dr. and Mrs. Benjamin F. Bailey have returned to Lincoln following a two months' stay in California.

Dr. Earl Rogers, a Nebraskan, formerly located in Arkansas, has become associated with the State Health Department.

Dr. Robert Best of Holdrege addressed the Professional Women's Club of Farnam recently, on his experiences in Europe.

Edgar Cline, M. D., of Auburn, Nebraska, spent four weeks at Cook County Hospital taking post-graduate in medicine this summer.

Dr. M. H. Brodkey of Omaha has departed for Chicago where he will spend several weeks taking post-graduate work in allergic diseases.

F. M. Tushla, M D., of Auburn, Nebraska, returned recently from taking post-graduate work in Surgery at Cook County Hospital in Chicago.

Dr. Victor E. Levine, professor of Biochemistry at Creighton Medical School, has returned to Omaha following a fourteen months' stay in Alaska.

Dr. and Mrs. G. F. Waltemath returned recently from a two weeks vacation spent in Rock Springs, Jackson Hole and other points in Wyoming.

Dr. Richard Coleman, a recent graduate of the University of Nebraska Medical College, has been appointed medical officer for an expedition to the Arctic Circle by the Standard Oil company.

CHRISTMAS SEALS

Help to Protect Your Home from Tuberculosis

Dr. and Mrs. M. H. Carrig of Bloomfield, Nebraska, spent the week of September 25th to October 2nd in Minneapolis, Minnesota, where Dr. Carrig took a post-graduate course in Pediatrics at the Center for Continuation Study of the University of Minnesota. On October 1st they attended the Nebraska-Minnesota football game.

MARRIAGES

Dr. Clayton Buhl of Nebraska City, to Miss Anne Frehling of Haigler, October 1.

Dr. Lester Buis, son of Dr. and Mrs. John Buis of Pender, to Miss Isabel Connolly of Muncie, Indiana, August 14.

Dr. Raymond R. Rembolt to Miss Mae Street, both of Lincoln, September 11.

DEATHS

Dr. Edward L. Jones, Raymond. Born in Illinois, he attended school at Valparaiso, Indiana, where he received his B. S. degree. He came to Nebraska where he taught school at Sidney for a time. He then entered Lincoln Medical College and received his M. D. degree. He practiced in Denton prior to coming to Raymond in 1924. Death came October 12, following a long illness, at the age of 74 years. Surviving are his widow, Dr. Agnes H. Jones; five daughters, and a son.

Dr. Guy Seward, Fremont. Born in Pennsylvania; he graduated from Barnes Medical College in 1902. He came to Fremont in 1924, from Neola, where he had practiced. Dr. Seward was surgeon-general of the Veterans of Foreign Wars, having served in the Spanish-American and the World wars. Death occurred in an Omaha hospital, September 6, at the age of 64 years. His wife and a sister survive.

Dr. Fred E. Calkins, Fremont. Born in Wyoming, Iowa, he came with his parents to Polk county, Nebraska, in 1873, at the age of 7 years. He graduated from the University of Iowa in 1899, and located in Hill City, South Dakota. He came to Fremont in 1918, and remained there until his death. The doctor was active in civic and social activities of Dodge county for many years. He died at the age of 71, at his home, August 28. He is survived by his wife and three brothers, and a sister.

Next Annual Session, May 2, 3 and 4, 1939, in Grand Island

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Some Important Points in the Diagnosis and Treatment of Acute Intestinal Obstruction*

LAWRENCE P. ENGEL, M. D.,
Kansas City, Missouri.

The mortality of complete, unrelieved intestinal obstruction is one hundred per cent. This is true regardless of the level of the obstruction, but this one fundamental fact should always be borne in mind. The higher the obstruction the more rapid and profound are the symptoms, with early collapse and early death unless the obstruction is promptly removed.

There is no more urgent surgical emergency than the relief of such an obstruction, and the mortality rises with the hours of delay. Seventy to eighty-five per cent of all patients with complete obstruction can be saved by surgical intervention and it is possible to improve these figures a great deal. Some recent reports indicate that no improvement has been accomplished in the last twenty-five years. In our experience considerable improvement has been attained and corresponds with the recent report from The Presbyterian Hospital in New York. Their mortality for the four-year period from 1916 to 1920 was 66.6 per cent and for the period from 1932 to 1936 it was 28.4 per cent. In both groups well over half the cases were of more than forty-eight hours duration. Theoretically the mortality in acute mechanical obstruction should be but slightly greater than that of any laparotomy of election. This can be accomplished only by earlier diagnosis and operation.

The forty-eight-hour period is usually considered the dividing line between the early and the late case. This is in error as it does not take into consideration the location of the obstruction. It might perhaps be used in the low obstructions but in the high obstruction any case after twelve hours is most certainly a late case. There is no reason why any case should go undiagnosed for more than twelve hours.

This implies of course that the physician be called within the first few hours after the onset. One recent report in which operation was carried out early gives a mortality of only 7.7 per cent. An analysis of the late cases brings out some very enlightening facts. Oftimes the patient does not seek relief until late. On the other hand, many cases are allowed to drift into a late stage while under the care of a physician. This is due to: (1) A mistaken diagnosis such as gallgladder or renal colic, food poisoning or so-called acute indigestion. (2) Atypical symptoms as occur in very low obstructions or in cases which are at first only partially obstructed but which later become complete. (3) The hope that the obstruction, although recognized as such, will in some way relieve itself.

An early diagnosis is made chiefly by a painstaking history, and a careful examination. Since this paper is concerned only with the acute mechanical obstruction the subject will be approached from that standpoint. If no hernia is present the most common cause of such an obstruction is a previous abdominal operation with resulting bands of adhesions. This previous laparotomy may have been many years before. The first symptom as a rule is a rather diffuse indigestion type of pain, followed shortly by sharp cramping pain increasing steadily in severity. These severe pains are rythmic and correspond with peristalsis. Between pains the patient may be fairly comfortable. Palpation of the abdomen will usually initiate one of these colicy pains. Vomiting is almost invariably the next symptom

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*Read before The Annual Assembly of The Nebraska State Medical Association, April 27, 1938.

and will gradually increase in frequency until nothing can be retained by mouth. Very often at about this time a bowel movement will occur, followed shortly in many cases by two or three small liquid stools. This represents merely the emptying of the bowel below the obstruction due to the irritation of the obstructive lesion and the transmission of the increased peristalsis from above the lesion. This is commonly seen in the sudden obstruction due to a small, sharp, band of fibrous adhesions. These few loose movements too often lead to the diagnosis of food poisoning. The significant fact in an obstruction is that after the initial emptying of the segment below the lesion, nothing comes from the bowel in spite of continued and increased cramping pains. In food poisoning the diarrhea continues. Distention soon develops and in thin individuals the distended loops and peristalsis are easily visible. Auscultation at this stage reveals forceful, gurgling peristalsis. The silent abdomen with only an occasional metallic tinkling represents the very late stage. Much information can be obtained from the character of the vomitus. At first it is merely the contents of the stomach. Then as reverse peristalsis begins at the site of obstruction the vomitus becomes bile stained denoting regurgitation from the duodenum. This next becomes deeper bile colored until, as the duodenum and upper jejunum are emptied, the bile disappears and the vomitus is of a cloudy light brown color coming from lower in the jejunum. Next is the fecal vomitus from still lower down and this is indeed a dangerous sign denoting the late stage of obstruction. Internes and nurses frequently report fecal vomitus because of the brown color. This is an error. Fecal vomitus is that which has a fecal odor. In high obstructions fecal vomiting does not occur. In the past the presence of fecal vomiting was believed essential to the diagnosis of obstruction. That is the reason the high obstructions died and the low ones were allowed to go into the last stage of dehydration, chemical imbalance and extreme distention. Fortunately this is not the case today and it is probably wise not to include fecal vomiting in the symptomatology. Signs of shock and prostration appear early in the high obstructions. The pulse becomes rapid and weak, the blood pressure falls and cold sweat and pallor round out the picture. In low obstructions the train of symptoms develops more slowly, with long intervals between pains and vomiting, and with slowly developing distention. Too often a little physiologic saline solution by hypodermoclysis brings such apparent improvement that operation is delayed until vascular damage occurs with resulting gangrene of a segment of bowel.

After strangulated hernias and post-operative fibrous bands stands carcinoma as a cause of mechanical obstruction. As a rule a malignancy produces a gradually increasing obstruction with at times a rather sudden, acute occlusion. These are usually suspected by the history and are nearly always low in the colon. Volvulus, intussusception, foreign bodies, chronic pelvic inflammation, etc. are other causes but produce the same clinical picture. Next to the history and physical examination a flat x-ray plate of the abdomen gives the most valuable information. Normally not a sufficient amount of gas is present in the small bowel to show on the x-ray film. In the presence of an obstruction the small bowel becomes distended and filled with gas making it plainly visible by x-ray. In addition to this, with the patient in the upright position, or on the side, the fluid in the distended loops of small bowel form various fluid levels on the film. Some knowledge also as to the location of the obstruction may be gained from the flat plate. If the colon is not distended the obstruction is obviously in the small bowel and at times the distended small bowel will be seen to terminate sharply at one point. This is of invaluable aid in planning the incision.

Given then a typical or even a strongly suggestive history plus the finding of distended gas filled small intestine on the x-ray film we should need nothing more to make the diagnosis of obstruction. The blood changes which are more or less characteristic of obstruction occur late and should not be considered as an aid in arriving at an early diagnosis. It is at about this point in the management of a case that a blunder is too often made. Even though we feel reasonably certain of the diagnosis there may perhaps be a few atypical findings or perhaps a little gas has been obtained by an enema. The patient may state that he feels better and that the pain is less, and we note the vomiting is not so severe. Decompression of the stomach and upper intestinal tract by means of continuous gastric suction is started and the patient is given glucose and saline solution parenterally. The improvement is immediate and almost miraculous. There can be no doubt that the understanding of the water and chemical balance of the body, and the introduction of methods to decompress the upper intestinal tract by continuous suction have been the two greatest advances in the treatment of intestinal obstruction. There can also be no doubt that they have been responsible for many disastrous delays in the proper surgical treatment. They should be considered as valuable adjuncts in the treatment which is primarily surgical. In only one type of obstruction should they be used as the primary method of treatment and then only with the greatest caution. This is in the obstructions which occur in the immediate post-operative period following laparotomies where the obstruction most frequently is due to a fresh, sticky exudate which soon disappears. Here the relief of the intra-intestinal tension above the obstruction and the maintenance of the proper water and chemical balance will tide the patient through the two or three days until the exudate lets go. Even in this type of case operation should be resorted to if the colicy pain continues and the returns from the suction continue to be intestinal in character. This can be determined within a very few hours after the beginning of the treatment.

The first fundamental in the treatment of an acute mechanical obstruction is to relieve the obstruction, and the only certain way to do this is by operation. Therefore this should be done as soon as the diagnosis is made. In the very late cases, three or four hours may be allowed for decompression by continuous gastric suction and for the administration of salt solution and glucose. At times a blood transfusion may be given to supply essential serum proteins.

The decision as to the operative procedure to follow must rest with the judgment and experience of the individual surgeon, but a few fundamentals may be outlined. Spinal anesthesia is the anesthetic of choice. The ideal procedure is to search until the obstructive lesion is found and to correct it. In many cases this entails considerable exploration with the removal of many loops of distended bowel from the abdomen, resulting in additional trauma to the bowel and adding materially to the surgical shock. To avoid this as much as possible several points should be observed. The point of maximum pain and tenderness will as a rule mark the point of obstruction, and although the pain is rather diffuse, careful questioning will establish the fact that it is always worse in one region or seems to stop at the same point every time. The scar of a previous laparotomy, may be a clue. This is of particular help if it had been a pelvic laparotomy, for in such cases the obstruction is nearly always in the lower ileum. The rapidity of development of symptoms will mark it as a high or low obstruction. All of these will aid in planning the incision which should of course be made as near the obstruction as possible. When it is necessary to "run the bowel" a very valuable hint is to start at the caecum and run the collapsed, ribbon bowel rather than the distended portion. In low small bowel obstructions and in those secondary to pelvic operations this method is much faster and of course less shocking. At times it is difficult to determine whether or not a loop of bowel is viable. The color may be misleading. It is usually believed that if the color improves following the application of hot packs, the bowel is viable. Here the distinction is very fine and the individual imagination enters into it. More important is the condition of the vessels of the mesentery. If pulsation can be demonstrated the bowel is viable. Very often the advice is: "When in doubt, resect." Such advice may be too radical for we have on many occasions replaced rather doubtful loops without disaster. In a very bad risk patient an obviously gangrenous loop can be exteriorized and removed later, leaving a double barrelled enterostomy. This can be closed then at any time. The value of simple enterostomy has been much discussed. Most are agreed that continuous gastric suction will accomplish all that a high jejunal enterostomy will. At the lower levels, however, it is an entirely different problem, and we feel that there are still some very late, bad risk cases which can be saved by a low enterostomy performed under local anesthesia. In the case of an entirely silent bowel it is of no value, for all that is accomplished is the drainage of a single loop. In a few cases, however, we have experienced a return of bowel tone and profuse drainage through the enterostomy tube thirty-six to forty-eight hours after operation.

Active and intelligent post-operative treatment is started immediately and attention should be focused on replacement and maintenance of the normal water and chemical balance and on the nutrition. In order to carry out the treatment intelligently some knowledge of the fundamental principles involved is necessary. There is an established circulation in and out of the upper intestinal tract. The normal amount of secretions into the intestinal tract in a period of twenty-four hours has been estimated at between 7,500 and 10,000 cc. This is in the form of saliva, gastric juice, bile, pancreatic juice and the secretions of the small intestines. This amounts to two or three times the quantity of water ordinarily taken by mouth, three to four times the amount secreted as urine and about twice the total blood volume. This fluid is for the most part reabsorbed by the upper intestinal tract and is therefore a great factor in the economy of the body fluids. The persistent vomiting in intestinal obstruction results in the loss of this valuable fluid with its chemical constituents and in a very short time upsets the water and chemical balance of the entire body. In the treatment then it is first necessary to replace this loss and then to maintain the normal amount. The loss of ten per cent of the water content of the body causes serious disorders and the loss of twenty to twenty-two per cent causes death. It has been estimated that an individual of average weight (one hundred forty to one hundred fifty pounds) will require from 2800 to 3500 cc. of water to alleviate the condition of dehydration as characterized by dry, hot skin, dry tongue, and scanty urinary output. In addition to this, 2000 cc. are required daily for vaporization and 1500 cc. for urine. Therefore for a patient who was dehydrated prior to operation, 6000 to 7000 cc. of water must be given within the first twenty-four hours. This includes replacement and maintenance for that period. After the first day it is only necessary to give from 3000 to 3500 cc. The amount of sodium chloride and glucose required depends upon the individual case and should be determined by frequent checks of the blood chemistry and urine. If the blood chlorides are normal, salt is not necessary. If the urine shows sugar, glucose must be discontinued temporarily. Maintenance amounts, however, must be given. The average daily requirement of sodium chloride is five or six grams. Too much salt will result in edema, especially when the serum proteins are below normal. For the average adult patient we now give 2000 cc. of five per cent glucose in Ringer's solution intravenously and 1500 cc. of Ringer's solution alone by hypodermoclysis every day. Frequently it is necessary to vary this from day to day. Continuous venoclysis over a period of days we believe to be dangerous and experiments have shown that it may lead to pulmonary embolism. By giving the one solution in the morning and the other in the afternoon the patient gets a little rest in between and more important than this, he is not disturbed at night. The intravenous solution should not be given faster than 500 cc. per hour and preferably not faster than 350 cc. per hour. In the average case this will take care of the water, chemical and to a slight extent the nutritional requirements for a time. It is to be remembered that no proteins are included in this scheme and in patients with edema and a low serum protein, blood transfusions are definitely indicated. The recent advances in the parenteral administration of fluids are all very wonderful and many lives have been saved, but at best the method is a very poor substitute for the way in which water and food should normally be taken. As soon as possible, therefore, water and food should be given by mouth and special emphasis should be placed on foods of high protein content.

CONCLUSIONS

1. Maintenance of the normal water and chemical balance by the parenteral administration of fluids has reduced the mortality of intestinal obstruction.

2. Further reduction of the mortality will result from earlier operation.

3. In complete, mechanical obstruction, the twelve hour period should be considered the dividing line between the early and the late case.

4. A careful history and examination, plus an x-ray plate of the abdomen will in the vast majority of cases make the diagnosis within the first twelve hours.

5. The amount of water, sodium chloride and glucose required, varies somewhat in each case and should be checked frequently.

STREPTOCOCCUS IN MILK STORED AT ATMOSPHERIC TEMPERATURES

(Journal of Hygiene, London, October, 1937). Pullinger and Kemp tried to determine whether Streptococcus pyogenes can multiply in milk stored under normal conditions. The main commercial grades of milk have been investigated, i.e., raw (graded and ungraded), pasteurized and sterilized milk. It was found that Streptococcus pyogenes multiplies readily in sterilized milk stored at 22° and 18° C., and more slowly when stored at 15° C. In fresh raw milk this organism begins to multiply slowly only after from forty-eight to seventy-two hours of storage at from 18° to 22° C. In laboratory pasteurized milk the result is similar, but both commercially pasteurized milk and raw graded milk bottled for distribution sour too rapidly for multiplication to take place after artificial contamination. These facts suggest that widespread epidemics are rarely due to extensive multiplication of Streptococcus pyogenes in milk during commercial or household storage. The initial degree of contamination of milk with Streptococcus pyogenes has no influence on this organism's ability to multiply during storage. The failure of Streptococcus pyogenes to multiply during storage is due to its natural reluctance to grow at atmospheric temperatures, the bacteriostatic action of the milk and the readiness with which saprophytic bacteria multiply at atmospheric temperatures. Infected cows play a major part in the spread of milk-borne Streptococcus pyogenes epidemics. Routine investigation of apparent milk-borne epidemics should include the immediate bacteriologic examination of an individual sample of milk from every cow concerned in the supply under suspicion.—*Journal A. M. A.*

Irradiation Therapy of Cancer of the Uterine Cervix*

E. W. ROWE, M. D.,
Lincoln.

My approach to the subject is that of a radiologist. No organ of the body except the skin offers greater opportunity for palliation or cure of cancer than does the cervix of the uterus. As elsewhere, it is the early cases that offer the best prognosis; but relief from advancing malignancy is a worthy objective even in apparently hopeless cases. Because cancer of the uterus is particularly vulnerable to irradiation, and the application of radium and the roentgen ray especially convenient, this form of therapy lies largely in the domain of radiology.

Early in the century, surgery attained the pinnacle of success in efforts to eradicate cancer by means of anatomical dissection, succeeding in almost excising the cancer cells themselves. Culmination of efforts to remove the visible and microscopic evidence of cancer from the uterus, the adnexa, the cellular tissue of the pelvic floor and the neighboring lymphatic channels, produced the well known technique called the Wertheim operation, developed by a young Viennese surgeon by that name, in 1898. No better technique has been devised since then, and for over a quarter of a century surgeons emulated his example as much as the disciples of old. Today there are but a few surgeons, as Bonney in England, who have not discarded it for the more promising benefits of irradiation.

Crossen(6), as most other surgeons of note, has announced that he has abandoned surgery in cancer of the cervix, although the successful outcome of many cases requires a combination of surgery and irradiation. He states that the crucial point is not the cancer in the cervix but in the pelvis, where it must be destroyed; and irradiation is the most important factor in attaining success in the concerted attack on the outlying cells. Too many patients are treated by half-way surgical or radiological measures, which do not carry lethal doses to the cancer cells in the distant zone.

Until the advent of the intracavity use of radium and the more recent refinements in roentgen therapy, no further advancement had been made in the recovery rate of the sufferers treated for cancer of the uterine cervix.

"To sum up, therefore: The argument in favor of excisional surgery by Wertheim hysterectomy is the ablation of the carcinomatous deposits in the glands, and this alone can be the justification for an operation which has an immediate mortality of 17 per cent." (Ministry of Health Report, 1927)(7).

"The arguments in favor of radiotherapy are:

1. The immediate mortality is negligible.

2. The statistics of survival rate in the early cases are in no way inferior to those of hysterectomy.

3. The patients are not deterred from seeking early advice by the prospect of a severe operation.

4. A certain number (Heyman says 12 per cent) of patients beyond all surgical aid are restored to health and survive more than five years.

5. As a palliative measure in very advanced cases no other treatment at present known is so beneficial."

The field of irradiation therapy is still advancing. Efforts of standardization are being made, the bilogical actions are better understood, and the required dosage more generally recognized. Today almost every well known center established for the scientific treatment of this disease is depending mainly for cure or relief upon radiation as the principal agent in its armamentarium.

The following table is well known and often quoted to show the improvement in results obtained by the Wertheim operation(19).

					Five-year cure-rate (per cent)	
	Cases Seen	Cases Operated	Operability rate (Per cent)	Operative Mortality (per cent)	Relative	Absolute
Wertheim	979	450	46	19	41.3	19
Mayer	545	343	63	19.9	31.2	19.6
Stoeckel	350	243	70	18.9	35.4	24.6
Sweifel	443	251	58	7.6	47.8	27.6
Franze	473	383	81	15	37	28
Bumm	263	179	68	12	43	28
Bonney	450	284	63	16.5	38.7	24.4
Fletcher Shaw	200	106	53	21.7	37.8	20
Total	3,703	2,239	60.4	16.4	38.7	23.4

(Bonney, Lancet, February 8, 1930.)

Before the advent of radium and roentgen rays the greatest handicap was in the treatment of the inoperable cases, when there seemed to be almost complete defeat in any effort to arrest the spread and to relieve the pain, to say nothing of the utter hopelessness of salvaging even one patient from the unfortunate group. In those cases judged to be inoperable, attempts were made to remove the vaginal part of the growth by means of some form of cautery. Repeated applications of the actual cautery sometimes gave temporary relief. Some surgeons attempted to destroy the growth completely by prolonged applications of heat, while others performed a high amputation with the cautery. Other methods combining surgery with cautery, and the use of zinc chloride, have found favor at various times. By these methods there was no hope of cure, and they were used merely to give some relief from distressing symptoms.

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*Read before The Annual Assembly of The Nebraska State Medical Association in Lincoln, April 28, 1938.

Enough has been said of the development of irradiation to show that it has not only rendered great service in the treatment of hopeless cases, but also has largely replaced surgery in the operable cases, in the last five to ten years.

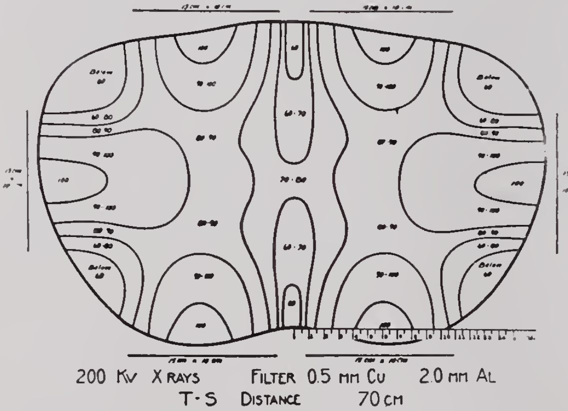

Fig. 1. An example of technique of roentgen therapy in which homogeneous irradiation is practically obtained through the pelvic area expressed in percentage of toleration of healthy tissue by multiple ports of entry.

The structure and position of the uterus are both favorable from the point of view of radiation. The cervical canal and uterine cavity are capable of holding tubes of radium and in the fornices in most cases it is not difficult to place applicators for cross firing. The central position of the uterus, the comparative resistance of the rectum and bladder, are factors permitting large doses. The local effect of the radium in the uterus can be augmented both in the same organ and in the contiguous parts and along the lymphatic channels by the use of the roentgen ray before or afterwards. It is now possible to administer quite adequate dosage by the selection of optimal wave length, cross fire, and the knowledge of the biological action upon both the neoplastic growth and the surrounding healthy tissue.

Cancer of the cervix occurs at all ages, principally between 45 and 60 years, but no age is excluded. Dr. Palmer Findley(9) reports the occurence in an infant of six months and in an adult of 92. Malcolm Donaldson(7) has found a record of 1½ years. Authentic cases are not unusual at 18 years and rather frequent between 20 and 30 years, the peak of the curve is reached at about 45, and from that year it drops steadily to 75. after which it is a rarity.

The majority of cases of carcinoma of the cervix start in the squamous epithelium. The proportion is roughly five per cent columnar epithelium and 95 per cent squamous, with a more limited class in between of the spheroidal cell type arising in the transitional cells where the cervical glands open on to the cervical canal.

The clinical varieties of carcinoma of the cervix are mainly of three types: the hypertrophic, the ulcerative, and the diffuse nodular. The hypertrophic type is capable of rapid and extensive growth, and may indeed fill the vagina. This may occur without any evidence of extension into the pelvic cellular tissue, so that the uterus may remain movable for long periods despite the size of the growth. The other varieties on the other hand, tend to spread upwards and laterally at an earlier date, so that a small lesion of the cervix may already have infiltrated the parametric tissues when first discovered. In any case, whatever type of growth, the disease remains localized in the cervix, in early stages. The rectum is usually involved late. The bladder may be involved also but usually quite late. Involvement of the uterus may give rise to hydronephrosis and derangement of renal function, so that uraemia is often the immediate cause of death. The condition of the patient with advanced carcinoma of the cervix is a pitiable one, the bladder and vagina sometimes forming an indistinguishable cavity.

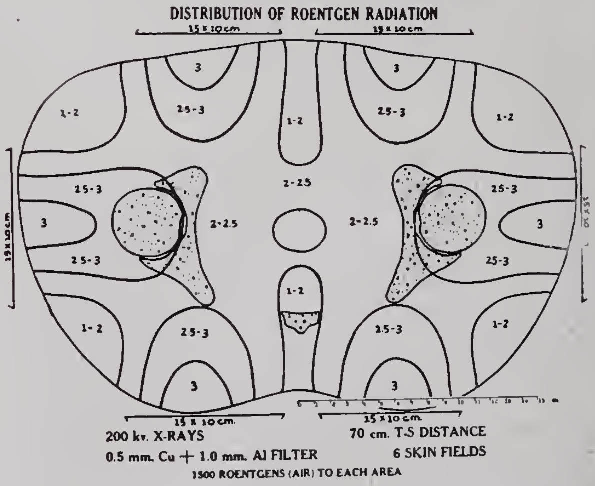
DISTRIBUTION OF ROENTGEN RADIATION
15×10cm
15×10cm
3
2.5-3
1-2
2-2.5
200 kv. X-RAYS
70 cm. T.S DISTANCE
0.5 mm. Cu + 1.0 mm. Al FILTER
6 SKIN FIELDS
1500 ROENTGENS (AIR) TO EACH AREA

Fig. 2. An example of technique expressed in threshold erythema doses.

The lymphatic spread to the internal iliac glands of the pelvis takes place comparatively early in some cases. Figures for involvement of

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Illustrations—From Arneson[1]

lymphatics vary. Bonney(7) states that in a series of 339 cases he found glands had carcinomatous deposits in 143, i. e., 42 per cent. Cullen has pointed out that in advanced cases there may be none. Deposits at a distance, outside the pelvis, are uncommon, as the local condition generally causes death before the cells from lymphatic masses have been carried to other organs, such as the liver.

The first symptoms to be noticed is often not reported by the patients, who may ignore a slight vaginal discharge, although their attention may be drawn to a blood-stained one. Irregular hemorrhage is the first symptom to bring the patient for medical care. Irregular menstruation and occasional show of blood in the menopause, followed by no undue consequences, are so common occurrences that they are too often disregarded. Every woman, married or unmarried, should be made to realize the importance of their symptoms. The secondary anemia as a result of the loss of blood, may be the only complaint until a very advanced stage.

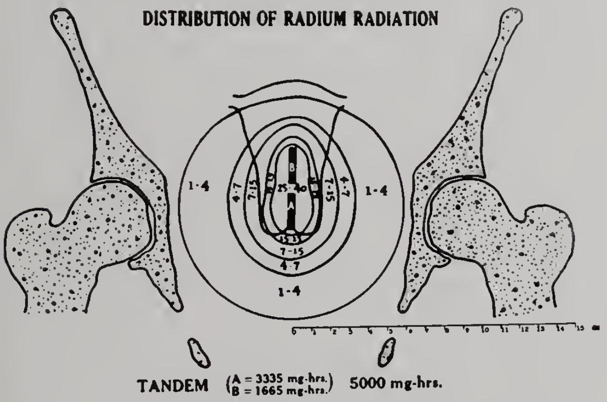
DISTRIBUTION OF RADIUM RADIATION
1·4
4·7
7·15
15·30
25·40
B
A
1·4
4·7
7·15
15·30
7·15
4·7
1·4
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
TANDEM (A = 3335 mg-hrs. B = 1665 mg-hrs.) 5000 mg-hrs.

Fig. 3. An example of the dosage in uterus and pelvic obtained in a common intrauterine application of radium.

One of the first signs requiring careful study is erosion of the cervix. Speaking generally, an erosion tends to occur symmetrically around the external os, whereas a carcinoma is found eccentrically. An erosion may feel velvety and does not bleed readily on manipulation. Occasionally with one lip enlarged a cancer may be mistaken for a polypus. A polypus can be generally distinguished by the fact that it has a definite pedicle coming through the cervix, and the lip of the cervix can be felt surrounding it. On the other hand, a carcinomatous mass may become polypoid, and a mucous polypus may undergo malignant changes. When there is any real doubt—and in early cases there must nearly always be some uncertainty—a microscopic section is the one and only method of settling the diagnosis.

The question of precancerous conditions for practical purposes may be easily settled by calling attention to the preponderance of evidence that the repair of lacerations and the cure of accompanying pathology, in a large list of cases, have been the factor of safety in the prevention of cancer. Ward, Lynch, Norris, Miller, Crossen, Novak, Healy, Pemberton, Smith, Davis and Graves give an aggregate list of 7,209 patients in which trachelorrhaphy, amputation and cauterization for laceration of the cervix and associated inflammation, were performed. In only six, cancer developed. Dr. Findley(9) feels that 80 per cent of all cancers of the cervix can be prevented by timely repair of laceration of cervix or by cautery.

It is interesting to note the findings at necropsy reported by many different observers. Fricke has tabulated the experiences in the Mayo Clinic(10).

One thousand and one hundred and seventeen patients were treated by radium and roentgen rays at the Mayo Clinic 1924-1933 inclusive, for carcinoma of the uterine cervix. Thirteen died during the primary course, giving a treatment mortality of 1.6 per cent. The first group mostly died of acute pelvic infection and hemolytic streptococcal septicemia. There were as many patients in the first group with lymph nodes as in the second group, and a greater number with distant metastasis in the first than in the second. These distant lymph nodes were unsuspected by clinical methods. The distant metastases were mainly found in the lungs and liver. These findings caution one to give a guarded prognosis and teach the lesson that each case must be studied thoroughly. With suspicion of metastasis, or impaired renal function, the treatment should be limited to palliation rather than cure.

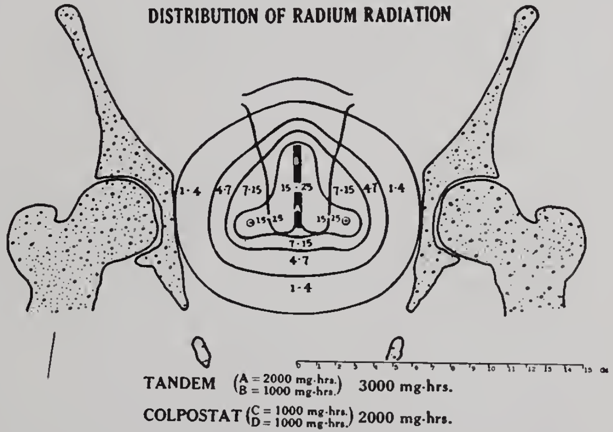
DISTRIBUTION OF RADIUM RADIATION
1·4
4·7
7·15
15·25
7·15
4·7
1·4
B
A
15·25
15·25
7·15
4·7
1·4
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
TANDEM (A = 2000 mg-hrs. B = 1000 mg-hrs.) 3000 mg-hrs.
COLPOSTAT (C = 1000 mg-hrs. D = 1000 mg-hrs.) 2000 mg-hrs.

Fig. 4. An example of dosage obtained by the application of radium in the uterus and the fornices.

FINDINGS AT NECROPSY OF PATIENTS WHO DIED DURING FIRST OR SUBSEQUENT VISITS TO THE CLINIC

Findings at necropsy	Group 1 Died during first visit*	Group 2 Died during subseq. visits**
Peritonitis	7	1
Septicemia	4	0
Terminal pneumonia	3	2
Hydronephrosis	2	6
Fistulas	0	3
Metastasis to lymph nodes	6	6
Distant metastasis	5	2

*Necropsy obtained in 11 of the 13 cases.
**Necropsy obtained in 8 of the 10 cases.

DISTANT METASTASIS AMONG PATIENTS WHO DIED DURING FIRST OR SUBSEQUENT VISITS TO THE CLINIC

Metastasis to:	Group 1 Died during first visit*	Group 2 Died during subseq. visits**
Lungs	5	1
Liver	2	1
Kidneys	1	0
Ileum and peritoneum	0	1

*Metastasis was present in 5 of the 11 cases which came to necropsy.
**Metastasis was present in 2 of the 8 cases which came to necropsy.

Heyman reported from the Radiumhemmet, Stockholm, in the ten years 1916-26, 1,017 patients treated, 20 died; a mortality of 1.96 per cent. In reviewing the world literature he placed the mortality at 1-2 percent in all clinics treating cancer of the cervix by irradiation methods.

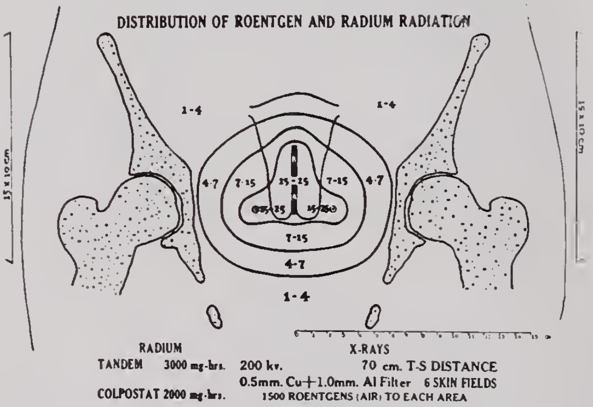

Fig. 5. Combined use of tandem and colpostat application of radium and roentgen irradiation to pelvis.

Bowing and Fricke$^{(4)}$ have also presented interesting statistics which illustrate the main complications and the extent of the disease as it is encountered when first medical advice is obtained. In the period from 1930-34, 541 patients were received with carcinoma of the uterine cervix, 495 were treated, 90 per cent were found inoperable under their methods of selection, 5 per cent met with major complications, and 1.2 per cent died. The usual time for treatment extended over three weeks on the average, for both the radium and roentgen therapy. The dosage was graded according to the grade and radiosensitivity of the lesion. At the first visit 91.5 per cent, or 495, were accepted for treatment.

Table I
CLASSIFICATION OF LESIONS IN 541 CASES OF CARCINOMA OF UTERINE CERVIX

Lesions	CASES Number	Per Cent
Early (Stage 1)	11	2.0
Borderline (Stage 2)	44	8.1
Inoperable (Stages 3 and 4)	323	59.7
Modified*	163	30.2
Total	541	100.0

*In 13 of these cases the lesions could be classified in stages 1 and 2 and in 150 cases they could be classified in stages 3 and 4.

Table II
CONDITIONS WHICH PRECLUDED TREATMENT WITH RADIUM

Conditions	CASES Number	Per Cent
Condition hopeless; growth extensive	25	54.3
Recent treatment elsewhere	3	6.5
Patient desired to undergo treatment at home	6	13.1
Previous treatment apparently had been effective	6	13.1
Previous operation made treatment impossible	2	4.3
Carcinomatous fistulas or proctitis	3	6.5
Acute pelvic cellulitis	1	2.2
Total	46	100.0

Table III
COMPLICATIONS WHICH CAUSED RADIUM THERAPY TO BE ABANDONED

Complications	CASES Number	Per Cent
Pelvic cellulitis	11	39.4
Pelvic cellulitis (pelvic abscess)	2	7.0
Pevic cellulitis (general peritonitis)	3	10.7
Hydronephrosis (anuria)	4	14.3
Cachexia	2	7.1
Pyometritis	2	7.1
Pulmonary embolism	1	1.6
Intestinal obstruction	1	3.6
Patients wished to continue treatment at home	2	7.1
Total	28	100.0

Table IV
TREATMENT IN 495 CASES OF CARCINOMA OF UTERINE CERVIX

Treatment	CASES Number	Per Cent
Complete	314	63.4
Limited	132	26.6
Abandoned	28	5.6
Prophylactic	21	4.2

The pioneer work in the development of irradiation therapy of cancer of the uterine cervix has taken place in large centers where material has been abundant and well controlled. Methods have grown up in these places so that the Berlin type, or the Paris, or the Radiumhemmet, or the Memorial Hospital carries with it certain association, with principles in procedure, refinements in technique, and well-publicized results. Dr. Healy in Memorial Hospital, affiliated with Cornell University, Drs. Kelly and Burnam at Johns Hopkins, and Drs. Bowing and Fricke at the Mayo Clinic, are among the best workers in this country. Abroad, among the leading institutions are the Radiumhemmet, with Dr. Heyman; the Radium Institute in London; The Radium Institute in Brussels; the Rarium Institute in Paris; and at Munich, Germany.

In order to aid in the standardization of methods, all a great deal alike but varying only in minor details, The American Radium Society has instituted a survey of methods and results obtained by radiologists in America. This report was published in the American Journal of Roentgenology and Radium Therapy, August, 1937(12). A questionnaire was sent to all members. The criteria used were those recommended by the Health Organization of the League of Nations, for the correct reporting of results in the radiotherapy of cancer of the uterine cervix.

It is interesting to note that the League advised that statistics should consist of only cases actually examined and treated by the one reporting. All should be classified as the condition was found at the time of treatment. Percentages should be used only when corrected for errors. Less than 15 cases should not be reported at all. The statistics should include only cases of cancer of the uterine cervix (including the stump) which were primarily treated by radium and roentgen rays, and where the first treatment was given five years prior to the report.

The following cases should be excluded: (1) Cancer of the corpus uteri and (2) vagina; (3) recurrent cases after radical operation; (4) patients treated radiologically elsewhere; (5) patients admitted for combined surgical and radiological treatment; (6) histological types of cases classified as precancerous conditions, chorioepithelioma, sarcoma and malignant mixed tumors.

The stages of the cancer of the cervix uteri should be classified:

Stage I: The growth is strictly limited to the cervix uteri. Uterus mobile.

Stage II: Lesion spreading into one or more fornices with or without infiltration of the parametrium adjacent to the uterus, the uterus retaining some degree of mobility.

Stage III: (a) Nodular infiltration of the parametria on one or both sides extending to the wall of the pelvis, with limited mobility of the uterus or massive infiltration of one parametrium with fixation of the uterus. (b) More or less superficial infiltration of a large part of the vagina, with a mobile uterus. (c) Isolated metastases in the pelvic glands, with a relatively small primary growth. (d) Isolated metastases in the lower part of the vagina.

Stage IV: (a) Cases with massive infiltration of both parametria extending to the walls of the pelvis. (b) Carcinoma involving the bladder or rectum. (c) The whole vagina infiltrated (rigid vaginal passage) or one vaginal wall infiltrated along its whole length with fixation of the primary growth. (d) Remote metastases.

The answers necessarily came only from those members with large numbers of cases and well systematized records.

COMPARISON OF EUROPEAN AND AMERICAN CANCER CLINICS

5 Year Survivals	(7) Stock-holm (Heyman) 1914-1923	(16) Schrei-ner	(7) Paris 1919-1926	(7) Munich 1924-1926	(7) Mayo Clinic 1915-1924	(7) Mem. Hosp. 1922-1924	(12) American Roent. Society
Stage I	40.4	80	55	49.4	75		37
Stage II		33.5	34	23.1	61.54		18
Stage III	16.0	7	20	17.9	21.49		16.6
Stage IV			1	4.9	24.82		
Totals						44.5	

It is the rule to use both roentgen rays and intra-cavity radium. About half of the members use radium in single applications and half repeat it. Practically all use the roentgen rays obtained by 200 k.v., and a majority a current of 15-30 ma. intensity. About half employ 50 cm. S.T.D., the other use 60-80 cm. distance. Most were using 1 mm. cu. for filters. The portals were 4-6 in number, size 8x12 cm. or 15x15 cm. Dosage per field varied from 1,200-2,000 r. with a limit of 4,800-12,000 r. Doses of 200-400 r. per day for 20-40 days were given. Practically all treated patients once a day but many gave two ports at a treatment.

In the administration of radium, most members gave it continuously although few interrupted the application. Half separated the uterine and vaginal radium applications and half gave them simultaneously. Less than half of the reporters use for the entire radium treatment thirty hours or less; a similar number use 100 hours or more. Experience now seems to indicate that the smaller doses and longer hours cause fewer complications. Practically all cases of pyometrium, cystitis, proctitis and intestinal obstruction were reported by authors who used short periods and relatively large doses. One hundred hours is recommended. The larger part of the radium is given in the uterus and the smaller in the vagina. Half give 3,500-5,000 mg.-hr. in the uterus and 3,000 mg.-hr. or more in the vagina, making about 6,500 mg.-hr. and rarely going to 10,000 mg.-hr. for combined uterus and vaginal dosage. Rarely is the combined dosage less than 6,000 mg.-hr. Usually two or more tubes are placed tandem in the uterus and the other tubes held against the cervix and placed in the fornices by packing or special containers.

There are various methods for the administration of the roentgen rays. The extremes are represented by Coutard in Paris, who gives small doses over a long period—6-8 weeks—and by some workers in Berlin who, holding to the old massive dose of the Germans give all in four or five days. Very few now follow the Berlin method, many are studying with interest the remarkable results of Coutard, but for economic reasons, and perhaps on account of superior equipment, the American radiologists seem to take a middle course. The usual method reported was a course of roentgen therapy to sterilize the activity of the cancer cells in the entire pelvis, a course of intensive intracavity radium application followed by another series of roentgen therapy to intensify the irradiation received in the uterus and especially in the parametrium. Some, however, prefer the radium first in order to do what surgery is necessary and especially to obtain material for biopsy, followed by roentgen therapy, all in both methods of procedure to extend over three to four weeks.

Arneson(1), formerly with Memorial Hospital, New York City, but now with Washington University, St. Louis, has given some illustrations which explain clearly the accuracy with which radium and roentgen rays may be applied. He illustrates the distribution of radiation through the pelvis with a variety of methods for applying radium and roentgen rays. Threshold doses are shown for greater or lesser than lethal doses. It has been shown that for doses within reasonable limits of tissue damage, it is impossible to deliver a lethal amount of radiation for a distance of more than 3 to 4 cm. from the intrauterine tandem. The roentgen treatment is essential for the delivery of radiation to the parametrial disease beyond the zone affected by radium applied to the cervix. Advancement will be made by improving the technique for delivery of external irradiation rather than in employing different technics for applying radium to primary lesions. No one plan it suitable to all patients, due to differences in anatomical conditions. It may not always be possible to give radium and often it has to be especially adapted to special conditions. But in nearly all cases some palliation may be offered to the patient by the judicious use of radium and roentgen rays; or by one or the other.

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Miss Babb: "Give me a sentence using the word 'beans'."

Gloria M.: "My father grows beans."

Shirley P.: "My mother cooks beans."

Raymond S.: "We are all human beans."

Sulfanilamide Therapy in Gonorrheal Arthritis*

E. E. SIMMONS, M. D., and F. LOWELL DUNN, M. D.,
Omaha.

During the past four years we have treated 55 cases of gonorrheal arthritis with fever therapy and these were reported in part in 1937(1). The recent success of sulfanilamide in the treatment of other complications of gonorrhea prompted us to determine its effectiveness in gonorrheal arthritis. Five cases were selected during the past year. In this group all had concomitant genital Neisserian infections as demonstrated by stained smears. Except for one case (G. H.) study revealed no pertinent focal infection background that might have acted as a precipitating factor as pointed out by Spink and Keefer, or might have acted as an infection for a non-gonorrheal arthritis(2). In four cases minor joint trauma may have acted as precipitating factors.

There were three females and two males and the duration of the acute joint symptoms varied from one day to two months. All cases had acutely tender and painful swollen joints, three being monoarticular and two polyarticular in involvement. The initial genital infection was nine months in the shortest case (H. W.) and varied from one to ten years in the others. In the group there had been no previous arthritic symptoms. In two cases (G. H. and M. F. D.) there was a period of ten and fourteen days respectively during which rest, heat, and salicylates had been used without relief.

The treatment consisted of complete bed rest, sulfanilamide 80 grains per day for two days, then 60 grains a day for two days, followed by 40 grains a day for one week. The drug was well tolerated by all but one patient, the only symptoms being lassitude, slight headache, and clinical methhemoglobinemia. The results after administration of sulfanilamide were startling and rapid. In three (M. F. D., H. W., and G. H.) all pain had disappeared within 48 hours. They were allowed to go back to work in from seven to eleven days and there has been no recurrence of the arthritis in these cases at intervals of twelve, six and two months following dismissal. No other treatment was necessary except some aspirin and local heat during the first 24 hours. The other manifestations of gonococcus infection, including negative smears, disappeared in all patients, but in one (H. W.) there was a recurrence of gonorrheal urethritis four months following without recurrence of the arthritis. This cleared up promptly under sulfanilamide medication and local treatment.

In the remaining two cases additional therapy was necessary. One case (E. J. S.) became symptom free in 72 hours. He then went outdoors and fell, injuring the previously affected knee. Following this there was a great deal of effusion into the knee joint and this failed to respond completely to sulfanilamide, rest or heat. He was then treated elsewhere with immobilization and joint aspirations, and required more than a year for complete recovery. The other case (H. B.) responded within 48 hours to the first attack, but one month after dismissal arthritis recurred in the opposite foot and ankle, following an exacerbation of the infection in the pelvis. She failed to respond to sulfanilamide, rest and local treatments, and was given, following sulfanilamide, 40 grains daily for three days, a fever treatment of 106 degrees for ten hours. Following this the arthritis disappeared, cervical smears became negative, and the pelvic mass disappeared. This patient was unable to tolerate adequate doses of sulfanilamide without toxic symptoms—headache, dermatitis, chills and fever. This may account for the ineffectiveness of sulfanilamide.

A recent report by Colston, Dees and Harrill gives results essentially the same as ours in ten cases(3). In their cases the pain was gone in an average of two days, the swelling disappeared in an average of thirteen days and the patients were discharged in an average of thirteen days. Apparently all of their cases responded to sulfanilamide and rest alone.

These results indicate that all cases of gonorrheal arthritis should be treated first with sulfanilamide and rest. Those that fail to respond should receive fever therapy. The use of single ten-hour heatings shortens the total duration of treatment over our previous method and has proven fully as effective as the twenty-five-hour heatings in five sessions(4). Occasionally cases are seen that do not respond to sulfanilamide or fever therapy alone but will respond to a combination of the two(5). Certainly sulfanilamide is a great advance in the treatment of gonorrheal arthritis. The work of Swift and our own unpublished results has shown that sulfanilamide is of no value in rheumatic fever(6). We have not been impressed with its value in atrophic arthritis. For these reasons the effectiveness of sulfanilamide may be of some diagnostic value in the recognition of gonorrheal arthritis(7).

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SUMMARY

1. Five cases of gonorrheal arthritis were treated with sulfanilamide during the past year; three were pain free in two days and returned to work in less than twelve days.

2. One case received prompt relief but following injury to affected joint required one year of conservative treatment elsewhere for complete recovery.

3. One case after relapse required ten hours of fever therapy at a temperature of 106 deg. F. for cure.

4. Cases failing to respond to sulfanilamide within seven to ten days should receive artificial fever therapy.

5. Sulfanilamide is a definite advance in the therapy of gonorrheal arthritis.

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Obesity

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Until quite recently discussions of childhood nutrition have concerned themselves almost exclusively with the child who fell to a greater or less extent below the average, misnamed normal weight curve. Malnutrition became practically synonomous with undernutrition, in spite of many pious but half-hearted statements to the contrary. The evils of underweight have been so grossly exaggerated by medical and pseudo-medical authorities that the pediatrist has been forced into a position which was completely incompatable with his own common sense and scientific knowledge. An example of this was the almost universal belief of only a decade ago that the underweight child was a "pre-tubercular" child, whatever that might mean, and that such a child must at all cost be "built up" in order to escape a primary tuberculosis infection. This idea has now been completely disproved by the increasing knowledge of the epidemiology of primary tuberculosis. The unfortunate child who showed even a moderate downward deviation from the arbitrary height-weight curve was subjected to what amounted to persecution by teacher, parent, nurse and doctor. On the other hand, the real dangers and disadvantages of overweight have been almost completely ignored, and the obviously obese child has been pointed to as a splendid example of modern nutritional methods, in spite of the fact that on most of these children no particular "methods" were employed.

A brief mention of some of the conditions associated with overweight will suffice to prove the point. The obese person, child or adult, is often a potential diabetic. Various orthopedic conditions, ranging from pronated feet to Perthes disease are associated with overweight, which in some instances causes, in others aggravates, and in all renders treatment more difficult. Much has been made of the fatigue posture of the underweight child, but little has been said about the pronated feet, knock knees, lumbar lordosis and other characteristics of the obese type. Most of us feel that obesity increases the risk in surgical conditions, pneumonia, and other medical crises. More important than any of these are the social complications of obesity. These children are objects of ridicule by their playmates however highly they may be regarded by their teacher and doctor. This sets up a reaction which differs according to the mental and physical characteristics of the individual. The child who happens to be physically strong in proportion to his weight becomes a bully; we can all remember examples of this type. The child of normal or reduced strength becomes introverted, has feelings of inadequacy and reacts accordingly. The obese child is judged according to size, not age; too much is expected of him both physically and mentally, hence the common but erroneous opinion that fat children are dull. As a matter of fact, most exceptional children are overweight but their mental precocity does not prevent them from forming faulty social adjustments, thus wasting or even perverting their superior mental ability.

When we attempt to define obesity we are in just as difficult a position as in the case of undernutrition. Obesity has been defined by Talbot as an excess of subcutaneous fat in relation to muscle tissues, and points out that this condition may be present in a child of normal weight. The commonly accepted criterion of 20% or more above the average has many exceptions, especially when height alone is used. When other measurements, such as bi-acromial and bi-cristal are included, the accuracy of the standard is materially increased. Stored fat should normally furnish about one-sixth of the body weight. The weight of the skeletal tissue can be estimated only very roughly, though it must vary considerably in different individuals. Talbot has recently stated that muscle tissue should constitute about 37% of the total weight and has suggested an ingenious method of arriving at that figure by determining the creatinine coefficient. A coefficient of 20.4 represents a normal muscle weight of 37%. Lean children average 30.7, representing a muscle weight of 55% while obese children show a coefficient of 14, corresponding to a muscle weight of 25%. These differences would seem to be significant and to constitute the first approach to an objective measurement of obesity. The real question for us to determine, however, is not the presence or absence of obesity, but the necessity for treatment. Obvious and marked obesity demands treatment even in the absence of symptoms. Postural changes and other orthopedic symptoms are absolute indications. Personality and behaviour problems which may be ascribed to overweight require treatment of the obesity as the first step in the child's adjustment. Even the question of appearance deserves consideration, particularly in the adolescent girl.

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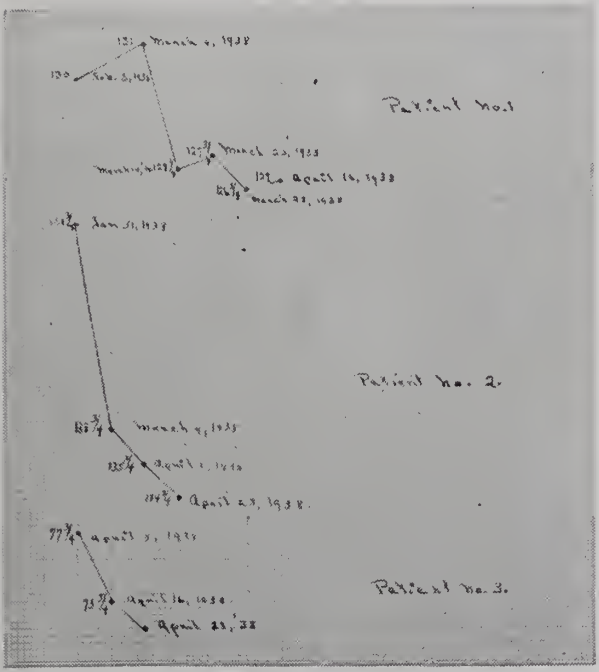
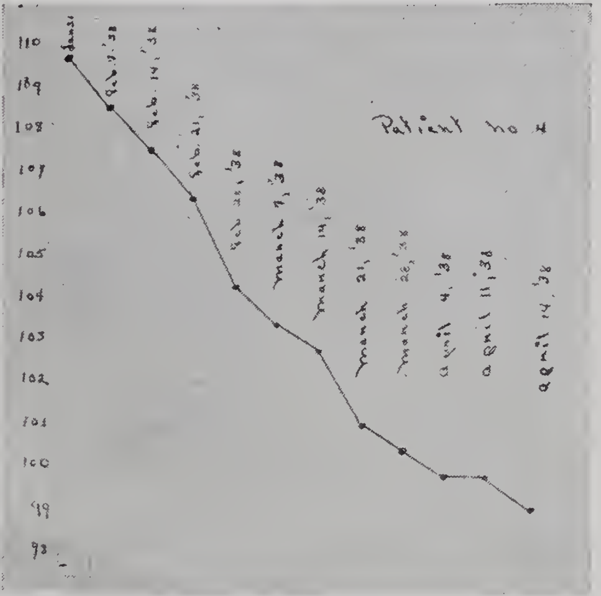
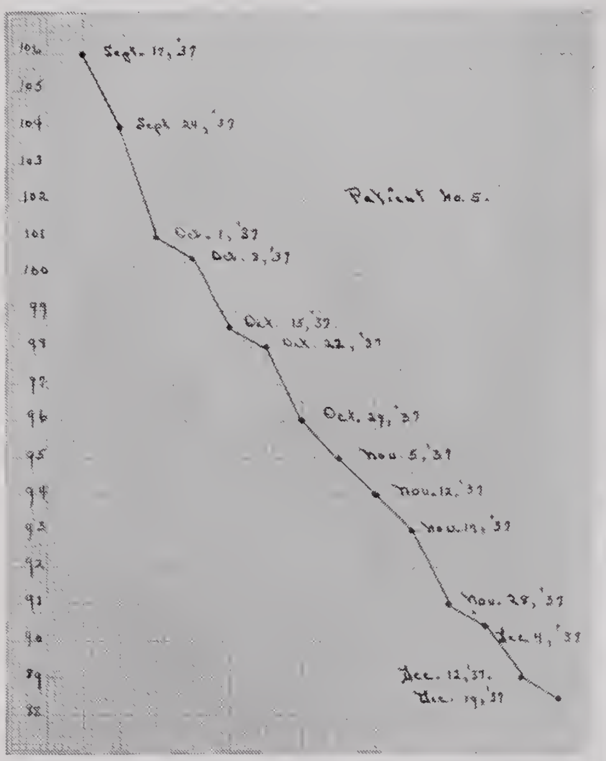


Part of the diagnosis of course consists in determining the etiology, if possible. It is however not necessary to know the etiology in order to treat successfully. This is not an argument against scientific investigation; it is simply a recognition of the fact that scientific investigators in this field are so far apart in their opinions that if we waited for them to agree on the cause of overweight in children, the children might remain overweight indefinitely. A search of the literature on this subject will reveal an almost equal number of authorities on each side of the controversy. Most endocrinologists stoutly maintain that obesity is nearly always endogenous and must be treated with endocrine substances, while a majority of pediatrists hold with the exogenous theory and claim that dietary restriction is the proper treatment. The equally good results reported by both groups are difficult to reconcile with their opposing theories. When we come to examine their methods however, we discover the curious fact that most of those who profess to believe in the endocrine theory also include on their treatment a "moderate" reduction in diet (about a thousand calories). Anyone who has tried to restrict an overweight adolescent youngster to one thousand calories a day knows that it is not a "moderately" reduced diet. The ordinary diet of adolescent boys will usually include 4,000 calories or more. Likewise, those who consider obesity to be entirely a matter of over-consumption of food often give a "little" thyroid or pituitary extract to accelerate the reduction or because of associated endocrine symptoms. A "little" thyroid usually means one grain daily, an amount which will cause marked symptoms in a child who has a normal endocrine balance.



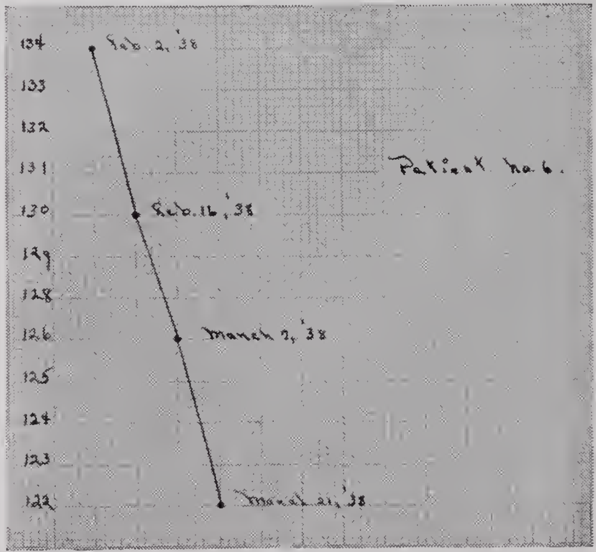
It is true that practically all overweight children eat too much; it is equally true that many children who habitually over-eat do not become obese. Many obese children show evidence of endocrine imbalance. Frohlich's syndrome, or adiposogenital dystrophy, is well known and much disputed. The peculiar fat distribution, abnormal as it appears by adult standards, is said to be normal in the child. The knock-knees and other postural defects may be the result of obesity itself rather than endocrine influences. The genital hypoplasia is said to be more apparent than real if the child's age rather than size is taken into account. Low basal metabolic rates are common, but the validity of the determination in a fat child may well be questioned, since adipose tissue, though entering into the calculations, is practically inert as far as oxygen consumption is concerned. Increased glucose tolerance is often found; whether it is due to decreased pituitary function, thus increasing the sensitivity to a normal amount of insulin, or a true hyperinsulinism, induced by frequent and excessive ingestion of carbohydrates, is still a question. Determinations of specific dynamic action have so far yielded conflicting results. The polyuria so frequently seen in obese boys may be the result of excessive intake of food, both solid and liquid. The most difficult symptoms to explain on any other than an endocrine basis are the menstrual disturbances of obese girls.



We may sum up the evidence by saying that the fat child is metabolically different from the thin one. This difference seems to be constitutional and hereditary, and may well be on an endocrine basis. The direct relationship of obesity to any endocrine gland has not been proved, nor has any adiposogenic hormone been detected. We must therefore leave the question open and await conclusive evidence on one side or the other.

In this state of indecision we must approach the question of treatment. The answer I propose is only one of several possible ones and is merely offered on the basis of successful experiences in a considerable number of cases.

When we view these children in a group we find a few in which no evidence of endocrine imbalance can be found and a few others who are of an obviously endocrine type. In between are a large number in which the evidence is inconclusive. My proposal is to treat them all similarly, with a carefully constructed diet, using endocrine substances as an adjuvant realizing that their use is entirely empirical in the present state of our knowledge. My reasons for advising a careful diet are obvious; we know that a sufficiently restricted food intake will invariably produce a loss in weight. The arguments for also using endocrines are less sound, but are offered for your consideration. Their use, in my experience and that of many others, greatly facilitates and accelerates the weight loss; associated symptoms, such as menstrual disturbances, are relieved; the hypodermic treatments and the oral medication have considerable suggestive value; finally, these treatments keep the child under observation much more closely than when diet alone is used.



Exercise is not stressed since it so increases appetite that the net effect is frequently nil. Fluid restriction and salt-free diets affect only the water content of the body and have no effect on the adipose tissue itself.

DIET

The first essential in the diet is that it be sufficiently restricted. This usually means less than 1,000 calories daily. The advice frequently given to merely maintain the present weight and allow the child to grow into it is too conservative, since many of these children already carry enough weight for a normal adult. The second essential is that the diet be as complete as possible and that it be properly supplemented with necessary vitamins. A sample 900 calorie diet is presented. The supplementary vitamins can be given in one of the combination capsules which are now available or may be given separately if desired. If all the food requirements are met by giving sufficient protein, minerals, and vitamines, these restricted diets are surprisingly well tolerated even by children who are accustomed to eating several times as much.

ENDOCRINE TREATMENT

Thyroid extract in doses of one-half to one grain is given, and increased or decreased according to the child's reaction. Most of these children take fair-sized doses of thyroid without showing symptoms and that finding may be taken as evidence that the medication is needed, regardless of the basal metabolic rate.

Anterior pituitary-like hormone, or pregnancy urine extract is the pituitary preparation of choice. This is contrary to the experience of others who prefer anterior pituitary extract in some form. My preference is based on experience with both materials together with the theoretical advantage of a substance with much greater potency per unit volume, and less protein content hence lessened reactions. Treatment is begun with 100 units (1 cc.) twice a week, increased to 200 units three times a week.

No untoward effects have been noted from the use of this combined method and results have been very satisfactory. A composite chart showing results in several cases is presented.

OBESITY DIET—900 Calories

	Wt. in Gms.	Gms. Protein	Gms. Fat	Gms. Carbo
Breakfast				
Sliced Orange	80	1		8
Whole Wheat Toast	15	1.5	.5	8
Poached Egg and Parsley	1	6	6	
Skimmed Milk	200	7	1	10
		15.5	7.5	26
Lunch				
Tomato Bouillon Clear Broth	120	4	2	
Tomato Puree	40			1
Whole Wheat Bread	15	1.5	.5	8
Cottage Cheese on Lettuce	50	10	1	2
Curled Celery	25			
String Beans	80	1		3
Fresh Strawberries Saccharine - Sweetner	80	1		8
		17.5	3.5	22
Dinner				
Round Steak in Casserole	80	22	6	
Buttered Beets	80	1		5
Leaf Lettuce in Diluted Vinegar, Onion, Speck	35			
Whole Wheat Bread	20	2	1	11
Fresh Pineapple Cubes Saccharine - Sweetner	80	1		8
Skimmed Milk	200	7	1	10
		33	8	35

The Treatment of Femoral Neck Non-Union*

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The reluctance of the fracture of the intracapsular portion of the femoral neck to follow the routine set by other fractures was recognized almost one hundred years ago by Sir Astley Cooper⁽¹⁾ who mentioned in his work on dislocations and fractures of the joints that he had observed only one bony union following this unfortunate trauma. Since that time, the treatment of this disability has been a matter of conroversy and inquiry among surgeons. This is well illustrated by the variety of treatments or therapy available for a fresh fracture of the femoral neck, and as would be expected in any pathological condition which has no single, generally accepted therapy, many failures are obtained. Thus non-union of the femoral neck presents itself as the second act in this problem and falls into a category similar to that of its predecessor, the fresh fracture, as many solutions are offered. The entire problem has been aptly designated by Speed⁽²⁾ as the "unsolved fracture."

The following factors have a definite bearing on the development of non-union in this region:

1. *Incomplete fracture reduction.* This follows either interposition of soft tissues as synovia or capsule, or physical inability to appose and maintain apposition of the fractured ends.

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**From Service of Dr. A. Steindler University of Iowa.

2. *Disturbance of blood supply to femoral head fragment.* Generally accepted is the idea that the blood supply of the head and neck comes from three sources, namely (a) through ligamentum teres, the arteries of which have been shown(3 4) to be present to some degree in most individuals; (b) femoral neck vessels; and (c) capsular branches of anterior and posterior cervical arteries. Thus at the time of fracture, the head fragment must depend entirely on the supply from the ligamentum teres vessels, which may be adequate to retain living tissue status and produce an atrophy of the head of intensity equal to that of the distal fragment, participating in the production of endosteal callus. If the supply is inadequate, the head fragment retains its original or pre-trauma density, except adjacent to ligamentum teres insertion where some circulation may be maintained. The majority of the head is then necrotic(5 6) and retains this density unless revascularized and replaced by "creeping substitution" from the margins. In the interim, however, the distal fragment alone must bear the burden of producing sufficient callus for union. Under such circumstances, bony union is the rare exception.

3. *Disturbance of osteogenesis.* In any fracture site, the neighboring cortex for a few millimeters undergoes death. This is replaced by the same process of "creeping substitution." Periosteum produces considerable callus but this tissue is deficient on the intracapsular portion of the femoral neck. Thus the endosteal callus from the distal fragment has a great task to perform in bridging the gap in the face of the above odds and additional possible hazards as disturbed phosphatase content and the possible detergent action of synovial fluid.

Let us follow the progress of a hypothetical fracture of the femoral neck to illustrate the difficuties. First, there is a high mortality from the original shock. Under the common closed methods of treatment, bony union is obtained in three or four months in from 50% to 60% of the cases. Our hypothetical fracture is one of the unfortunate non-unions, in which the patient is unable to use his hip and the problem persists. A bone graft is placed across the pseudoarthrosis and a similar length of time passes before the hip cast is removed and the patient is allowed up with a tuber seat brace and crutches. In the hands of the originator of the bone graft method(7), 90% obtain a bony union, probably because of the surgeon's dexterity and efficiency, but the vast majority of reports from other surgeons(16 17) state that 70 to 75% only are successful. Now we may assume our case falls in either category. Should bony fusion follow, the trauma of the original injury followed by the subsequent operative trauma and long immobilization may cause considerable restriction of motion and pain, on the basis of arthritic changes. The patient may, therefore, need another reconstructive procedure to provide a new joint space, which again necessitates long hospitalization for the purpose of adequate physiotherapy to the new joint and proper muscle training. Ironically, this new joint may succumb to similar arthritic changes and pain become most prominent with an associated unstable hip. Now let us follow his course if bony fusion does not follow the bone graft procedure. A reconstruction of the joint(7 8) with removal of the head fragment may be in order. An osteotomy may change the stress lines at the fracture site so that the sheering action of a vertical fracture line is nullified. Even after a good result following these procedures, arthritic changes may develop. Hence in desperation, the hip joint may finally be fused surgically in the optimum position for function, thus producing a painless stable extremity, but only after having been under active surgical treatment of at least two years' duration.

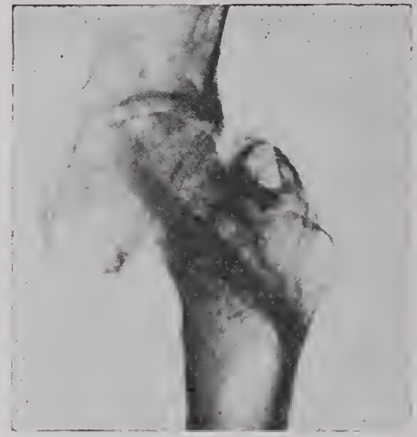
Fig. 1. Albee Bone Graft.

It is evident that each case must be considered on its own merits regarding the type of treatment to apply. Should we attempt a procedure with union in view, reconstruct the joint, or perform a palliative operation? The bone peg operation of Albee is usually unsatisfactory in individuals over fifty-five years of age, as the operative risk increases and the reaction of tissues to the operative trauma makes the development of degenerative arthritic changes probable. The Smith-Petersen nailing is less shocking but this is introduction of foreign material with its undesirable reactions, however mild. An atrophic head fragment would not be held well by the three-flanged nail, hence such a finding would predispose to failure. The necrotic or dead head does not necessarily contraindicate either of the above procedures but its presence will certainly decrease the chances for a satisfactory end result.

Should we reconstruct the hip joint? Whitman sacrificed the fractured head fragment entirely, reshaped the neck to fit the acetabulum and transplanted the greater trochanter downward with the attached abductor muscles to a new bed on the femoral shaft, thus maintaining these muscles in tone and position for later active abduction. Albee's reconstruction consists of similar reshaping of the femoral neck to fit the acetabulum after removal of the head fragment and wedging outward of the lateral half of the upper five inches of the femoral shaft without disturbance of muscle attachments to the greater trochanter and without separating the lower end of this freed portion of the shaft from its attachment inferiorly. Into the angle formed by these two bone segments is wedged the denuded head fragment which maintains the desired position and the abductor muscles under tension. The Colonna⁽¹⁰⁾ procedure places the top of the greater trochanter with a small amount of attached tendinous tissue into the acetabulum, the abductor muscles being transplanted lower down on the femoral shaft. Magnuson⁽¹¹⁾ implants the reshaped neck into a bed in the head. Brackett⁽¹²⁾ uses the same principle as Magnuson, except that the top of the denuded cancellous greater trochanter is placed against a freshened head fragment. These procedures are all less shocking than the bone graft methods of Albee and have their definite place in the case of an individual not in physical condition for the operative trauma associated with the graft. The reshaped neck, however, consists of denuded cancellous bone; minor incongruency between this and the acetabular cartilage, without interposed soft tissue as in the case of arthroplasty, may cause degenerative arthritis.

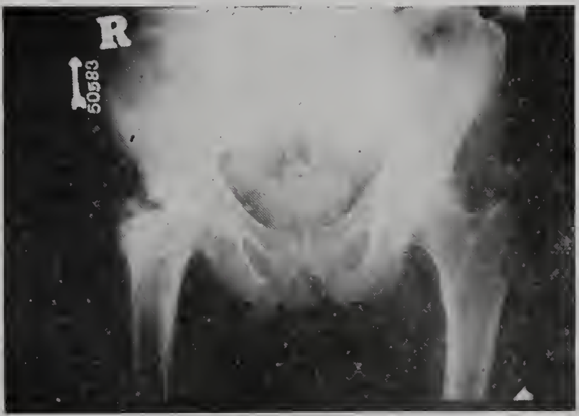

Fig. 2. Whitman Reconstruction.

Will a simpler palliative procedure produce a stable hip joint without pain? This is naturally the question in an individual, who, because of age or general physical condition, is certain not to tolerate any major operation. Lorenz(13) described a method whereby an osteotomy of the upper femur was performed in such a fashion as to allow the placement of the upper end of the distal fragment under the head itself, thereby passing the weight bearing stresses directly to the head instead of through the medium of the pseudoarthrosis. Schanz(14) used a slightly different type of osteotomy performed at about the same level but for the explicit purpose of abducting the distal fragment markedly if the head were movable. When union occurred and the leg was again adducted to neutral for normal weight-bearing, the proximal fragment accompanied the distal, thereby changing the line of fracture from the usual vertical position to one more or less in the horizontal position. He observed late healing at the old pseudoarthrosis site when the original sheering force of the vertical fracture line was transformed into the pressure stresses of the horizontal line. This is in keeping with Von Wilhelm Roux's law that interposed clot or tissue in a fracture may be changed to bone by intermittent functional stimuli or to connective tissue or cartilage by sheering or gliding forces. Both of these osteotomies are satisfactory selections for pseudoarthrosis treatment. There is little added shortening following the Lorenz method when properly performed and none after the Schanz method.

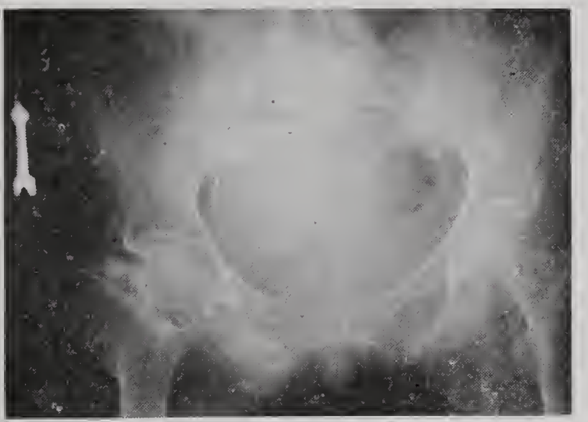
Fig. 3. Lorenz Osteotomy.

Let us assume that all of these procedures fail, either because of technical errors or because of the short-comings of the method used. The final solution is an arthrodesis of the hip joint. Gill(15) believes that this procedure should be performed sooner, perhaps after three or four months of conservative treatment with failure to obtain union. This attitude seems radical but is very logical in an individual of the laboring class on whom a pseudoarthrosis of the femoral neck places great financial strain, the direct result of the long protracted convalescence after the injury if each successive operative step is religiously followed. An arthrodesed hip in good position allows the individual to engage in his occupation and do almost everything except lace his shoe. The operative procedure is associated with more shock than reconstruction or palliative operations and hence is adaptable only to individuals of younger years and in good physical health.

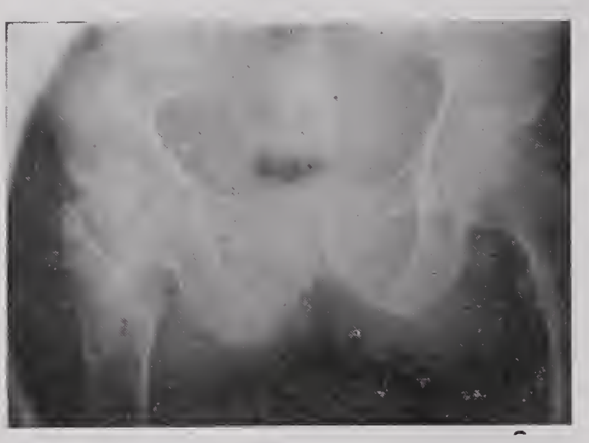

Fig. 4. Schanz Osteotomy.

A large group of individuals will tolerate no surgical treatment whatever, because of advanced age or general condition. These are treated with braces, pelvic belts, shoe lifts, crutches, physiotherapy, or a combination of these measures. Some are markedly improved by the application of a well fitting long leg brace with a padded ring for ischial weight bearing. Preferably made on a plaster model of the leg and hip, this ring must fit perfectly with pressure under the ischial tuberosity alone and none under the pubis. The metal uprights then transmit the weight of the body from the ischium to the ground, instead of through the medium of the skeletal structures. The pelvic belt has action similar to that of a sacroiliac belt; when laced snugly, it exerts compression about the pelvis, thereby reducing the upward glide of the femur with each step to a minimum. Physiotherapy, especially heat of the short wave type, is palliative only, having a beneficial effect on associated arthritic changes.

The following cases of femoral neck pseudoarthroses were seen on the orthopaedic service at the University of Iowa. They are divided according to the type of treatment instituted.

Bone graft operation. Five patients were subjected to this procedure, four males and one female, with an average age of 44 years, and a mortality rate of 0. They were observed on an average of five to seven years. Study of roentgenograms suggested that all femoral head fragments were living. Results are as follows:

Good - bony union, good motion, no pain, stable........1
Fair - bony union, limited motion, slight pain, stable 2
Poor - non-union 2

Thus only 60% favorable results were obtained from this small group (Fig. 1). The long immobilization necessary is the predisposing factor to subsequent pain and stiffness. One patient seen in this clinic, but having this procedure performed elsewhere, has very good union at the fracture site but also an efficient extra-articular ankylosis.

Two patients, males aged 28 and 51 years, were treated by open reduction and insertion of the Smith-Petersen nail, thirteen and three months respectively after fracture. The head in the 28-year-old patient was viable. Both are poor results as the coxa vara has been increasing and the pin in the living head is slipping out. The severe atrophy is probably the reason for this failure. The observation period here averaged 17 months.

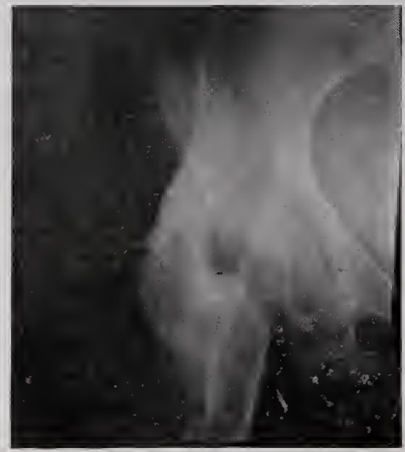

Fig. 5. Hip Fusion.

Whitman reconstruction. A total of fifteen patients were operated upon, four males and eleven females; average age 51 years; average observation 4.4 years; mortality none. Definitely necrotic heads were noted in three roentgenograms. The results are as follows:

Good - no necessary support, useful motion, occasional slight ache, stable (Fig. 2)........5
Fair - cane necessary, limitation of motion marked, occasional moderate pain........4
Poor - crutches necessary, no motion or constant pain 6

The criteria may be criticized because of occasional pain, but the good and fair results, 60%, were definitely improved. Two solid bony fusions of reconstructed joints resulted from this procedure with painless stable hips but classified as poor end results. The number of poor results is prominent and these failures must be laid primarily to the method itself as its rationale aims at restoration of motion and stability with minimal pain. Two patients died late of intercurrent disease.

Lorenz osteotomy. Nine patients were submitted to this type, one male and eight females, with an average age of 62 years, an average observation period of 5.4 years, and a mortality rate of none. In this group, all femoral head fragments were viable. Results are as follows:

Good - no support, motion adequate to sit down and to tie shoe, only occasional ache (Fig. 3)............2
Fair - cane necessary, moderate pain...............................2
Poor - pain marked..5
(4 technical errors as ostectomy sites were not properly placed).

The technical difficulty is well illustrated by the four errors, all producing unfavorable end results. With their exclusion from this group, 80% favorable end results were obtained.

Schanz osteotomy. Three osteotomies were performed, two on males, one on a female. The average age of the patients was 57 years, the average observation 3.3 years, and the mortality none. No necrotic heads were observed. Results are as follows:

Good - no support, no pain, adequate motion to sit down and to tie shoe (Fig. 4)......................................1
Fair - no support, occasional slight pain, restricted motion 2

Thus all three were favorable end results. Late bony union was not observed.

In a 37 year old female with a flail leg following anterior poliomyelitis which involved the entire leg musculature, a typical fracture of the femoral neck with a necrotic head was treated by arthrodesis (Fig. 5). The end result, observed for three years, was functionally excellent. In the same category as arthrodesis may be placed two of the Whitman reconstructions which resulted in bony ankylosis, classed as poor results of that procedure. Functionally, however, the latter two cases served as efficient arthrodeses. We may say, therefore, that three hip fusions had excellent results. The method is extremely radical in many opinions but the symptoms of the unstable hip disappear, the disability connected with a fused hip in the optimal position of 160° extension being about 20 to 25% of the leg.

Six fractures were treated by manipulation and hip spica immobilization in Whitman position for six to eight weeks. In this group, five were females and one a male. The average age was 43 years, average observation 1.6 years, and mortality none. Time elapsed since injury varied from five weeks to eight months, the average being five months. Three necrotic heads were observed. The five-week-old fracture was followed by bony union and proved a good result. One fibrous fusion necessitating no additional support is classified as a fair result. The remaining four were failures. Two patients died late of intercurrent disease.

Thirteen patients treated by a tuber seat brace (males six, females seven, average age 64 years, average observation 1.5 years, mortality none) showed four necrotic heads. All except three needed additional cane or crutch support but ten were considerably relieved of their pain. Three patients died late of intercurrent disease.

Thirteen patients treated by combination of pelvic belt, physiotherapy, crutches and shoe lifts, showing two necrotic heads, resulted in poor function in the majority of cases as would be expected. Only two walked without cane or crutch, presumably with fibrous fusion. The observation period was only a few months and adequate details are not available.

Twenty-four patients with seven necrotic heads were untreated because of their poor general condition. Attempted late follow-up produced no worth-while conclusions.

CONCLUSIONS

1. The Albee bone graft, which yielded only 60% good results in this series, is a radical procedure. Its use should be limited to individuals under 50 years of age and definitely without arthritic changes or symptoms.

2. The Smith-Petersen flanged nail is a good form of internal fixation but does not seem adequate fixation for an old fracture with considerable atrophy.

3. The Whitman reconstruction bears promise of a fair number of favorable end results, 60% in this series. The incidence of arthritic changes in the hip subsequently is high and is probably due to the fact that the reconstructed neck is in direct contact with the acetabular cartilage.

4. Both Lorenz and Schanz osteotomies are admirable means of changing the static stresses about the fractured neck, are associated with little shock, but offer technical difficulties. Excluding the technical errors, the combined results were favorable in 87% of the cases.

5. Arthrodesis is an efficient type of treatment, especially in individuals who desire to return to work quickly and in whom the earlier more conservative treatment has failed.

6. Since 23% of the cases had necrosis of the femoral head fragment and 80% had varying degrees of absorption, the need for individual case study is evident and would suggest a conservative plan for treatment such as the following:

If general condition is good—

1. With femoral head living—open reduction and bone graft or nail.

2. With femoral head necrotic: (a) Neck present, Albee or Whitman reconstruction. (b) Neck absent, Colonna reconstruction.

3. Osteoarthritis marked—fusion of hip joint.

If general condition is fair—

1. With femoral head living—Brackett or Magnuson reconstruction.

2. With head necrotic—Schanz or Lorenz osteotomy.

If general condition is poor—

1. With femoral head living or dead: (a) Schanz or Lorenz osteotomy. (b) Support alone.

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DISCUSSION

DR. J. E. M. THOMSON, (Lincoln): Mr. Chairman and Members and Guests of the Nebraska State Medical Association: I am honored by having been asked by Dr. Hamsa to discuss this very timely subject of nonunion of fractures of the neck of the femur. In discussing this subject, the most important thing I think we have to consider is the fact that we want to prevent nonunion. In reviewing Dr. Hamsa's paper, several factors come out relative to this phase of the subject. Since a large number of these cases have nonunion, careful handling to prevent injury to the blood supply is important. If they are tumbled from one place to another in beds and ambulance carts, they are bound to have some disturbance of this blood supply which has already been injured as a result of the accident. Therefore adequate splinting is essential. The Thomas splint is the only adaptable method of splinting them for transportation to the hospital in preparation for future care.

The second point is the complete anatomical reduction, and after check with anterior, posterior and lateral x-rays. Without these two methods you are lost. Unless a lateral x-ray is taken, you are bound to have a certain number of failures of reduction, because the lateral x-ray will show the position of the fragments is not satisfactory. All the Whitman tables and reduction apparatus is of no value unless the results are checked with the lateral x-ray.

Adequate treatment is the next important thing. A high incidence of nonunion occurs in patients over 60 years of age. A high incidence of ostoarthritis occurs after 45. Apparently every case of fractured neck of the femur is a potential ostoarthritic hip, no matter what treatment is used. The ordinary spica cast has brought faliures in 40 to 60 per cent of the cases. In all cases over 60, the failure percentage is much higher. We must consider some other methods if we are going to reduce the number of nonunions.

In our hands, the use of internal fixation has brought failures in 20 to 25 per cent of our cases. In the hands of others, it has yielded a lesser percentage of failure, or a higher favorable result. This internal fixation has the great advantage in that if correctly done, the patient can be treated without a cast and be on crutches—not weight-bearing—in three weeks.

In the way of constructive criticism, I have rather summarily taken the series Dr. Hamsa has presented, coming from the University of Iowa and the work of Dr. Steindler and associates, and instead of viewing them on the evaluation of success, we have looked at them from the evaluation of failure. The interesting thing about the Iowa University Orthopedic Clinic is they have been fair with every method of treatment, and tried them to the extent they are in position to recommend the best method.

There are possibly three methods which are uniformly good in fractures. The Schantz osteotomy and the fusion methods are best. The Lorenz osteotomy comes in next order. When you consider the total number of failures is only 40 per cent in a selected group where we have problem cases in the beginning, you will realize that this is a remarkably good result.

Let us take 100 hypothetical cases such as Dr. Hamsa has mentioned. Using internal fixation, we have 20 per cent nonunion. Of that 20 per cent which were treated by one of the operative methods, there are only eight failures. Sixty per cent have had successful results. We will add 12 successful results to the 80 good results, and you have 92 per cent success in treatment of fracture of the neck of the femur by these combined methods.

Concerning the next group of 100 treated by conservative methods, reductions and spica cases, you have a fifty-fifty proposition with a 40 per cent failure following treatment, by one of the various methods outlined by Dr. Hamsa, and 30 successful results therefor. Adding 30 to 50 cases, we have 80 cases, which I think gives a very splendid result.

DR. J. P. LORD, (Omaha): Early in my experience—in fact, when a student—I had experience under an expert in handling fractures of the neck of the femur. That means 60 years ago. There is much to be said on this subject, but to confine myself to the paper, I think perhaps I had better summarize my experience—not in detail, because of lack of time. I have succeeded with all measures—have had my proportion of successes and failures—but the older I grow the more I become convinced that prompt reduction of the fracture, anatomically, if possible, fixed permanently—meaning without possibility of movement—is the proper method; and the sooner it is reduced the better.

As soon as you have ruptured capillaries that are first thrown out for healing of the fracture, you have begun to develop a case of nonunion; so that I have not any patience any more with procrastination, unless the condition of the patient requires that the whole treatment be soft-pedaled. I think an early diagnosis and one of the more modern, recently accepted pinning operations, preferably by the multiple small drills, is the best method of treatment for suitably selected cases. Some of our men more advanced in handling of these cases report their results where the fixation is so complete that it does not require a cast. The patients are allowed to be raised up on the second or third day. They make a speedy convalescence, and it is now pretty generally conceded that those methods are by all odds the best.

If the practitioner is not prepared by training and experience to institute that treatment, the case should be put into the hands of those capable of carrying out that method. I regard it as the best. It is the temporizing, delay, and suffering which wear a patient out, and leads to unfavorable results—even death. It has been found some of the more weakly of these subjects are best treated by these means. Spinal, local or avertin or other modern methods should be used. The procedure lasts but a few minutes. The cast is fixed. The patients make a prompt, easy convalescence. That is the ideal toward which we should strive. The nailing of these old fractures or delayed union, as a rule, are doomed to failure.

I want to say I had to earn this experience.

I want to commend Dr. Hamsa's presentation. I think it is very fine. Dr. Thomson's discussion is also approved.

The Small Hospitals of Nebraska*

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The small hospital, consisting of thirty beds or less, has been founded, in many rural communities, to fulfill a real need, and is performing at the present time a valuable service. This type of institution, like many others, is caught in the cross current of social, economic, and professional forces which constitute the upheaval of today's living. Hence it seems worth while to pause for a moment to examine critically the status of the small hospital and its function now, and to speculate on its prospects for the future.

According to statistics obtained from the 1937 edition of "American and Canadian Hospitals," there are approximately fifty-five hospitals in Nebraska whose capacity is less than thirty beds. Most of them range in size from six to twenty-five beds, with a total for the group of 887 beds and 215 bassinets. This list is not quite complete, however, for there are several known hospitals which are not included.

The first phase in the development of these institutions apparently has passed, for there is little or no evidence at present that the number of hospitals or beds needs to be increased. The facilities now available seem sufficient for the communities served. The period from 1900 to 1930 saw the initial establishment of most of these small hospitals. Only eleven new ones have appeared since the latter date. Table 1 shows the number of hospitals founded in Nebraska by decades.

Table 1
THE FOUNDATION OF SMALL HOSPITALS IN NEBRASKA

Date	Number
1900 to 1910	8
1910 to 1920	12
1920 to 1930	20
Since 1930	11

Some of these were functioning earlier than the date given, under a different name or management. The decade immediately after the war was the period of greatest expansion in the establishment of small hospitals. Twenty of the fifty-five hospitals listed were founded between 1920 and 1930.

Most of these hospitals were founded by physicians whose only motive was to render better service to their patients. In practically all instances, there was no desire for, nor expectation of profit from the venture. The communities which have hospital facilities available, owe this advantage to the enterprise of some local physician who was willing to take the financial risk involved. Of the group of fifty-five hospitals, twenty-seven are definitely listed as owned and controlled by physicians. Sixteen additional privately owned institutions are largely in the hands of physicians, except for a few that are managed by nurses. Only four are controlled by religious denominations, and eight belong to some type of community association.

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*Read before The Annual Assembly of the Nebraska State Medical Association in Lincoln, April 27, 1938.

Table 2
OWNERSHIP AND CONTROL OF SMALL HOSPITALS

Ownership	Number
Physicians	27
Private (doctors or nurses)	16
Church denominations	4
Community association	8

Although the medical profession furnished the active pioneers in these projects, the members of the communities have been quick to see the advantage of these facilities, and to demand that they be expanded to meet added requirements.

A number of factors account for the establishment of these hospitals during the last forty years. The tremendous advances which have been made in medicine and surgery during this period have made access to hospital facilities almost a necessity in the proper treatment of a great many diseases. As a corollary to this, recent graduates in medicine have all been trained in the use of the hospital to a much greater extent than was formerly true, and their professional standing and contacts make some hospital affiliation inperative, if they are to continue to render the type of service of which they are capable. Since the medical profession has pointed the way, the public is becoming educated along these lines, and is demanding better service in the matter of examinations, laboratory facilities, and nursing care. Finally, the economic factor enters in, for the circumstances of most patients in rural communities, especially during the last decade, are so stringent, that it is no longer advisable, or even possible, to send patients away from home, except when the need for the services of specialists or more complete hospital facilities is most drastic. Many small hospitals have physicians and surgeons from larger places on their staffs, or at least available for consultations. This makes it possible for many patients to stay in the home community and still receive the same quality of service that they would otherwise have to leave home to obtain.

Despite the very real need for their existence, and the many advantages they offer to patients in small towns and rural communities, the small hospitals are beset by many problems and difficulties. As a basis for discussion of the factors which affect the welfare and continued function of these institutions, I shall cite the answers to a questionnaire received from thirty-four of the fifty-five Nebraska hospitals to which it was sent. If it had been possible, a personal visit to these hospitals would have been a much more fruitful method of study, for a questionnaire is rather unsatisfactory in evaluating any but concrete factors and actual figures. However, the replies received from other hospitals have been the source of some worthwhile information, which has aided in the clarification of ideas arising from my own experience in the direction of a small institution during the last eighteen years.

The most important problems of the small hospital concern the management, the finances, and the obtaining of adequate nursing service.

For economic reasons it is quite obviously out of the question for small hospitals to employ especially trained or experienced directors. For this reason, the direct management will continue to be largely in the hands of a doctor or nurse. Of thirty-four hospitals in Nebraska, twenty-five are under the supervision of a doctor or nurse, eight under trustees or a board of directors, and one under a lay person.

The general financial vicissitudes of recent years have naturally had a pronounced effect on these small hospitals. Hence it was considerable surprise to me that twenty-six of the thirty-four reported that the income from patients was sufficient to pay running expenses. Most of these institutions reported collections of from 75 to 95 per cent, with only four below 75 per cent, and none below 50. Only four reported that the income was less than current expenses. Nevertheless, these figures do not present cause for too much optimism, for all institutions reported practically no surplus that might be used in improving equipment, grounds or buildings.

From my experience, I should judge that to make such a favorable showing in the matter of collections, these hospitals must have had to be extremely persistent and callous in exacting payment, and must have had to turn away some patients of dubious financial standing. I doubt that anyone believes that such a collection record can long be maintained in Nebraska with our ever present droughts and depressions. It is the experience of every doctor I know that patients who pay are diminishing rapidly, and the number who expect free medical care is rapidly increasing. It will be impossible for this ever-increasing burden to be met with private funds indefinitely.

One of the most disturbing factors in the management of a small hospital in a rural community is the dearth of capable nurses. This lack can be traced partially, although not entirely, to economic sources. That only thirteen hospitals in the group of thirty-four are staffed entirely by graduate nurses is not to be wondered at, in view of present conditions. About one-half of the hospitals report some difficulty in obtaining graduate nurses, and one states that they simply are not to be had.

There are several reasons why it is difficult for the small hospital to obtain good nursing service. In the first place, a few years ago the profession of nursing seemed to be overcrowded, and many smaller training schools were discontinued in the wake of the depression. The available nurses were largely absorbed, for this reason, in hospitals. Secondly, the number of nurses graduated has decreased, because of increased requirements, which forced some hospitals to abandon their training courses. A third factor is that nurses who are capable have no trouble finding employment in cities, and furthermore, prefer a period of unemployment in the city, rather than to work in a rural community. It is not altogether a question of recompense, because many of them register with an agency on the condition that they will not be sent to the country, under any circumstances.

The result of all this is that the rural areas can command only the poorest of nurses, if they can get them at all. It forces many small hospitals to employ nurses with only partial training, and incompetents who, in many instances, are not worth their hire.

To indicate just how seriously some physicians are handicapped by this situation, I should like to quote from a letter written by a doctor who maintains a small hospital in a sparsely settled part of the state: "It is my own idea, badly needed legislation would help some of us smaller fellows, and also the larger ones, as well as raise the standard of the small hospital. I have in mind several hospitals the size of ours here that have never been in charge of a graduate nurse. The doctors do not employ graduate nurses, but they seem to be on the same ratio as we who employ no one who is not a graduate. I would even favor legislation that would compel every hospital (training schools not included) to employ a graduate nurse for every three or four patients or less. That is, if my hospital has an average daily of five patients, I should be compelled to employ two graduate nurses. Some of them running as high as six to twenty daily only employ one graduate nurse, the rest just handy girls they pick up. It is not fair to the patient, or to the hospital that employs graduates."

I am heartily in accord with this physician's opinion. It is difficult to understand how any place can be considered a hospital without a graduate nurse in charge. Nevertheless, the statutes governing the granting of maternity licenses, do not demand nurse's training as a requirement, although they express the rather ineffectual hope that there may be a graduate nurse in the neighborhood who can be called upon, if necessary.

Upon the answers to be found to these vital problems affecting the small hospital, that is, management, finance, and nursing care, depends the future of these institutions. These difficulties have to be faced, and the fate of these hospitals which minister to the needs of their communities hinges on the proper solution.

As to the management, it certainly will be necessary that doctors retain the active supervision, but it is doubtful, in view of present economic trends, if they can continue to carry the burden of ownership unaided. They have taken the initiative and risk in founding these hospitals, and have, to a large extent, carried the financial burden up to the present time, but they cannot continue to do so forever, under present circumstances. These institutions perform a useful social function in the community, and they should be a community enterprise and responsibility. Except for certain cases, such as an endowed organization, some civic agency must sooner or later assume the responsibility for their maintenance. Whether this responsibility be municipal, county or state, will probably depend on individual circumstances. In view of the fact that community needs are already met by existing institutions, it would seem only logical that medical care should be continued in these hospitals already equipped and functioning. Whatever civic unit takes over the function of hospital care, it would appear from present social trends, that there is likely to be more centralization of supervision and regulation of these small individual hospitals. Although individual physicians may resent this, it no doubt will come in the long run. In view of some of the difficulties that have already been enumerated, it may, in the final analysis, be a good thing. Few of us can fail to agree that the policy of hospitalization should be available to every one, regardless of ability to pay, is right. But if this is right, then it becomes necessary for some government agency to meet the expenses of such a program.

As to the nursing problem, I am confident that some solution will be found. Every human difficulty usually inspires or begets its own resolution. We are changing our ideas somewhat about the function and duties of the nurse. It has been stated that at least 75 per cent of the duties now performed by nurses could be done by trained helpers. If this is true, the answer to the present lack of nursing service should not be so difficult to procure. Ward workers can be trained to take over the more routine duties at present performed by the nurse, and the professionally trained worker can thus be spared for those matters that demand her expert attention. There is at present a movement throughout the state to train a group of such ward workers to take over the less exacting duties that the nurse now covers.

It is to be expected, also, that in view of these conditions, some unscrupulous elements will try to capitalize on the circumstances. That there is already at least one correspondence school for nursing may be but a sample of some of the dire influences that the nursing profession will have to combat, if its present prestige is to be maintained. The leadership of the nursing group is surely intelligent enough to realize the dangers inherent in the present situation, and to meet the challenge presented by such evils by cooperating with the medical profession in making available the highest type of care to all patients, wherever they may live.

In addition to these major concerns of the small hospital, the questionnaire furnished information concerning other matters which may be of some interest. Roentgenographic equipment is quite generally available. Twenty-three of the thirty-four hospitals either have x-ray equipment in the hospital or available in a portable machine. In the institutions which do not have x-ray apparatus, the radiographic work is done in the doctor's office.

Another important factor in modern medical care is the diagnostic aids furnished by the laboratory. A large proportion of the small hospitals cannot afford to employ a technician, and so the physician himself has to do the laboratory tests, either in the hospital, or in his office. Only ten of the thirty-four hospitals have a technician available, and some of these are on a part-time basis. For this reason, the quantity and quality of the laboratory work thus depends, to a large extent, on the individual physician's training, ability, and equipment in this field. As a general rule, however, most communities are equipped for the more common chemical studies, microscopic work, and basal metabolism tests. The facilities of larger laboratories are utilized for serologic and more complicated bacteriologic tests. It is impossible to determine, in a survey of this kind, the exact proportion of clinical cases in which laboratory tests are made, but it is evident that the proper studies are made in all cases in which serious disorders are suspected.

Another fact of interest elicited by this questionnaire is that, contrary to the generally accepted opinion, automobile accident cases are quite rare in the small hospitals. The answers show that this type of case constituted less than 4 per cent of the total. Most of the hospitals report only a few cases of this type. The preponderant number of serious accidents occur on main highways, and the injured are usually moved to the nearest large hospital. In certain isolated instances, the availability of a hospital near at hand might prove to be a life saver, but ordinarily, when a patient is prepared for removal from the scene of the accident, it is just as easy to take him to a larger hospital, a few miles farther away.

In this short discussion, I have merely touched on a few of the features of management of the small hospital, and some of the most pressing problems which this type of institution faces at the present time. The number of these small hospitals, and their records prove that they are valuable assets to the communities they serve. They represent an important economic, as well as social unit in the small town, and render an indispensible service in the care of the sick. The pressure of the times burdens them with certain definite difficulties, but, for the most part, they are well managed, have capable and conscientious medical staffs, and adequate equipment and facilities to furnish competent and commendable medical care.

Tumors and Inflammatory Swellings of the Neck

PART V—DIARY

N. FREDERICK HICKEN, M. D.; HOWARD B. HUNT, M. D.,
and ALFRED M. POPMA, M. D.
Omaha.

The salivary glands are subject to the same vicissitudes that affect other parenchymatous glands, namely trauma, infections and neoplastic transformations.

ACUTE INFLAMMATIONS

Acute infections of the salivary apparatus frequently appear as complications of infectious diseases, general sepsis or operative procedures. The clinical picture varies according to the gland affected. If the submaxillary gland becomes involved, the process extends rather slowly with pain and local tenderness being the chief complaints. In severe cases, edema of the floor of the mouth may interfere with deglutition and free motion of the tongue. Acute parotitis, on the other hand, is usually ushered in with chills, high temperature, and generalized malaise. At times the patient is too ill from the primary disease to pay heed to the initial swelling of the parotid gland but within twelve to twenty-four hours the inflammatory reaction has become so diffuse and painful that it becomes the major problem. Bilateral parotitis is not uncommon and is indeed an ill omen. The diseased gland becomes firm, tense and exquisitely tender. Any attempt to open the jaw provokes intense pain. The mouth is usually dry and parched. The periglandular tissues are swollen, edematous and turgid. Fluctuation does not occur for several days and when it does, it represents destruction and liquefaction of the parenchymatous tissue.

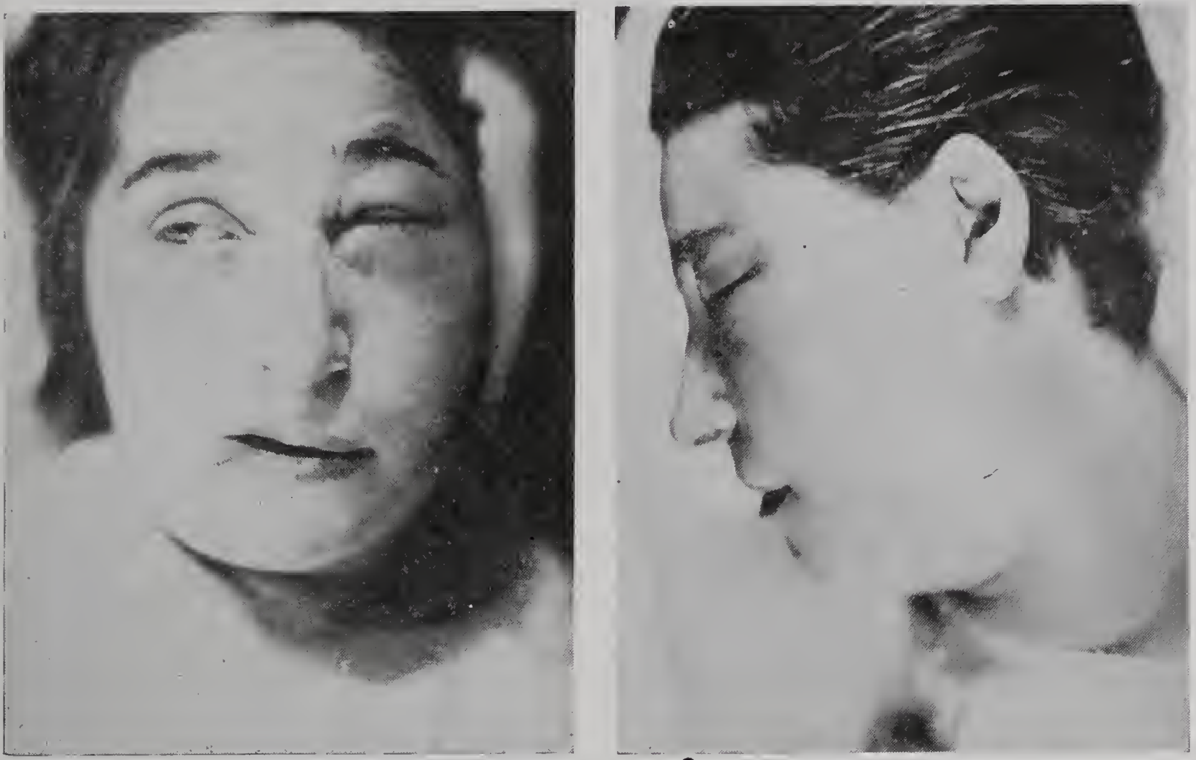


Fig. 1. Demonstrating edema and inflammatory swelling of face associated with acute parotitis.

Acute suppurative adenitis, Ludwig's angina, osteomyelitis of the jaw and trench mouth may closely simulate infections of the salivary gland but a painstaking examination usually permits differentiation. Much information can be obtained by placing one hand inside the oral cavity and thus palpating the tumor bimanually. By this means, it has been possible to palpate a small calculus incarcerated within Wharton's duct. Catheterization or probing of the ducts will frequently reveal a calculus or an inflammatory stricture. Gentle pressure on the tumor may express a small drop of pus from the opening of the involved duct, indicating the presence of a suppurative process. Radiographs may not only locate the offending calculus but will detect an osteomyelitis of the jaw. Sialograms are not very informative and we feel they are contraindicated in the presence of acute infection.

Prophylactic therapy yields good dividends. It is imperative that all oral sepsis be treated before subjecting any patient to a formidable operation. Frequent mouth washes with an antiseptic solution such as sodium perborate, cleansing of the teeth, avoidance of excessive sedation of the type that promotes mouth breathing, and the elimination of atropine which is a definite antisecretogogue will do much the prevent postoperative parotitis. Stimulation of the salivary flow by chewing gum has proved most useful.

Effective therapy is predicated on an early diagnosis. If the inflammation can be detected in its initial stage, when the swelling is just beginning, irradiation therapy is most effective. Twenty-five to fifty roentgen units delivered into the tumor mass twice daily usually abort the infection. If active suppuration has occurred, however, irradiation merely hastens the necrotizing process. Short wave diathermy, applied locally, has been very effective, not only in aborting the initial infection but in hastening the localization of pus in advanced cases.

When frank pus has formed, evacuation is essential. This can be done without injury to the facial nerve for the fibers of this nerve lie deep within the parotid gland and do not come to the surface until they have passed beyond the limits of the gland. If possible, the skin incision should be placed parallel to and behind the ramus of the mandible and should extend only through the skin. The abcess cavity can be opened by inserting a blunt hemostat into the diseased gland and slowly separating the blades of the instrument. If the suppuration is well advanced all small pockets should be opened up by the exploring finger and the area converted into one large abcess. Dependent drainage is essential. Occasionally, one will not encounter pus at operation but merely an intensely indurated gland of a woody consistency, but by the next morning the dressings are usually saturated with pus. If irradiation is not available, early incision of the capsule of the parotid gland will diminish the intracapsular pressure and minimize the amount of destruction. Short wave diathermy is valuable as a postoperative measure. If possible, it is usually the part of wisdom to remove the submaxillary glands in toto if they become infected.

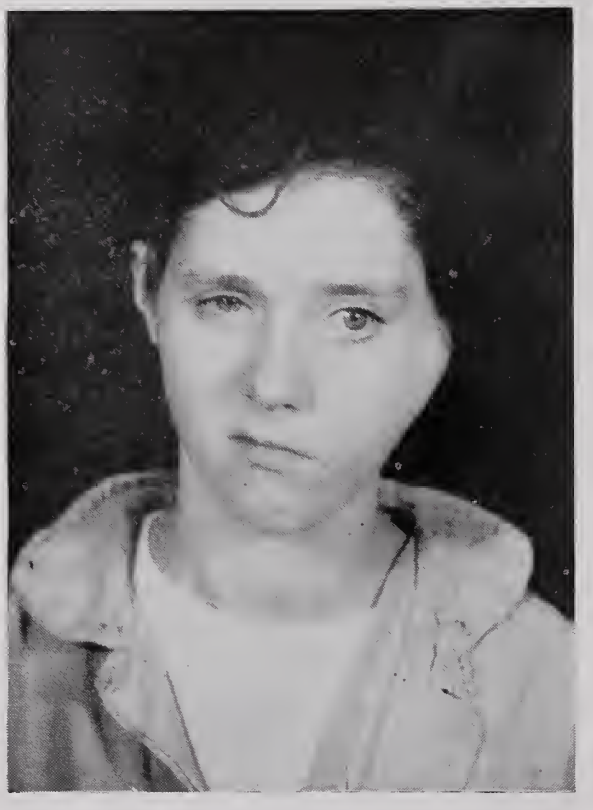


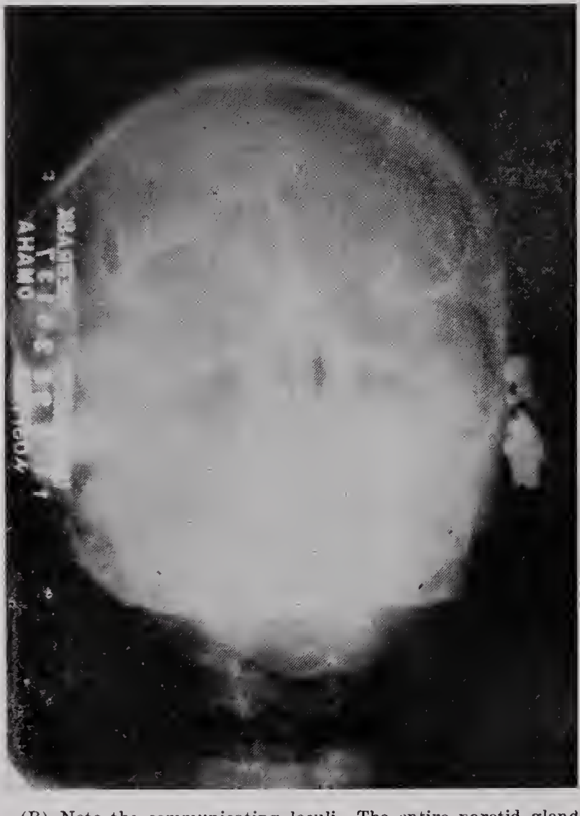
Fig. 2 (A) A recurrent lymphangioma of the parotid gland visualized by means of contrast roentgenograms.

TUMORS

Tumors of the salivary apparatus have the same characteristics whether they arise in the sublingual, submaxillary or parotid glands. Cystic dilatations of the sublingual and submaxillary glands are known as ranulae. The true ranula is caused by an obstruction of the ducts by a calculus or a stricture with resultant cystic degeneration of the parenchymatous tissues. They are soft, fluctuant, and not painful unless infected. Injection of the duct with contrast media (sialograms) may show the site of obstruction. Large cysts are best injected through the skin, following which the dilated gland and at least a portion of the duct are visualized on the x-ray film. The false ranulae represent cystic degeneration of embryological arrests in the floor of the mouth. They are best treated by complete excision or by the use of sclerosing substances such as sodium morrhuate.

MIXED TUMORS

These tumors of the salivary glands vex the pathologist, tantalize the clinician, tax the judgment of the surgeon and make the life of their hosts unhappy. The malignant variety are therapeutic enigmas and even the benign forms tend to recur with an amazing persistence. They may undergo carcinomatous changes if not treated and often produce undesirable cosmetic effects.



(B) Note the communicating loculi. The entire parotid gland was completely excised. No recurrence has been noted since.

The benign tumor is relatively asymptomatic. Pain and tenderness are usually absent though the tumor increases in size, and it is not unusual for a patient to carry the small, hard, slowly growing mass for a period of six to twelve years before seeking medical advice. The neoplasm is usually ovoid or lobulated and is not sharply demarcated from the normal glandular tissue. Hertzler emphasizes these benign growths usually originate in the lower portion of the parotid gland while the malignant types arise in the upper segments. It is well, however, to remember that a primary benign tumor may become malignant and hence malignant lesions may be found in the lower pole of the parotid gland.

The malignant form of mixed tumor grows more rapidly and often produces pain which radiates to the homolateral ear, down the neck or up into the scalp. Size is no index of malignancy for large neoplasms may be well encapsulated while smaller ones may be invasive. Pressure on or infiltration of the seventh nerve may result in a facial palsy. Metastasis to the regional cervical nodes invariably occurs but usually not until rather late. We have seen advanced tumors which have invaded the mandible by direct extension and resulted in a pathological fracture.

True carcinomas of the parotid gland are rare and are generally of the basal cell type. They are highly malignant, infiltrate adnexal tissues early and soon spread to the deep cervical structures. Erosion and ulceration into the large cervical blood vessels frequently usher in a terminal hemorrhage.

Differentiation between the benign and malignant variety is sometimes extremely difficult. Aspiration biopsies are informative but they cannot be depended upon, for tissue may be taken from one segment of the tumor which is benign while adjacent areas have undergone malignant transformations. At times the pathologist is unable to determine the exact status of the tumor even after a most painstaking examination.

TREATMENT

Every tumor of the salivary glands should receive prompt attention. Procrastination not only permits the benign growth to undergo carcinomatous transformation but also allows the innocent tumors to become so large that complete removal is not possible without injury to the facial nerve. Surgical removal offers the best prognosis.

In the benign tumor it is essential that complete extirpation be done. Haphazard, incomplete and half-hearted operations propagate recurrences. Even when the neoplasm is large, a careful tedious dissection will frequently permit removal of the offending mass without injury to the facial nerve. It is much better to sacrifice this nerve if need be and completely excise the gland than it is to chance recurrence of the tumor which has malignant potentialities. Unfortunately, these benign growths are so highly radio-resistant that x-ray therapy offers little aid. Most satisfying results can be obtained by thorough surgical treatment.

Malignant parotid tumors present a disheartening problem. Most of them have invaded the periglandular tissues so that complete excision is impossible. Preoperative irradiation to the point of skin tolerance through several ports, radical surgery, and postoperative irradiation with both x-ray and occasionally interstitial radium offer the best prognosis. Many cases demand heroic and radical treatment with resultant facial paralysis and cosmetic deformities if we hope to control the destructive process even temporarily. Half-hearted and incomplete procedures seldom afford even palliation.

Recurrent malignant tumors are usually best treated with interstitial radium and x-ray. Patients who are poor operative risks may often receive great benefit from irradiation only, particularly if the tumor is very cellular.

Sulfanilamide in Gonorrhea

Report of Case Developing Usual and Unusual Complications

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Since the time that sulfanilamide was discovered to exhibit therapeutic results on disease entities resulting from invasion of the hemolytic streptococci, current medical literature has been flooded with articles, discussions and case reports on its use in this and many other conditions. Its use in the treatment of both acute and chronic gonorrheal infection has not escaped. That sulfanilamide is a drug of great value in the treatment of this condition has been proven, but on the other hand it has been shown not to be infallible.

Cohn(1), by means of test-tube experiments found that sulfanilamide had bactericidal effect on gonococci in dilutions of 1:100 to 1:1000 after five hours and in dilutions of 1:1000 to 1:100,000 after twenty-four hours incubation at 37.5° C. He found sulfanilamide had no effect on gonococci when these were suspended in physiologic saline and injected into mice intraperitoneally, but 1 cc.

of a 1 per cent dilution showed definite protection in mice infected with gonococcus mucin suspension, preventing a septicemia which developed in nonprotected animals. It was discovered that one cubic centimeter of 0.1 per cent sulfanilamide gave irregular protection against gonococcal septicemia in mice.

At the present time the exact mode of action of sulfanilamide in the human body is not known. However it is indicated that the curative result is brought about by obtaining and maintaining a high concentration in the blood and tissues for several days. That the drug is readily absorbed and quickly diffused throughout the body is a known fact since it has been found in the cerebrospinal fluid, pleural fluid, prostatic secretion, saliva, pancreatic juice and bile in concentrations slightly lower than that of the blood. According to Schnitker(2), a level of from 7 to 10 mg. of sulfanilamide per 100 cc. of blood is optimum in obtaining the desired therapeutic effect. Little may be expected if the blood level is less than 5 mg.

The optimum dosage of the drug to attain this level of course varies. At least fifteen to twenty grains four times daily is required. Sulfanilamide is absorbed from the gastro-intestinal tract in about three to five hours.

Dees and Colston(3), in a series of cases treated with sulfanilamide find the results very satisfactory. They were favorably impressed because in the majority of the cases the disease was definitely checked without complications and as a result medical expense to the patient was greatly lessened.

The purpose of this report is not to condemn the use of sulfanilamide in the treatment of acute gonorrheal urethritis. It is being reported because in spite of sulfanilamide, which has been giving such satisfactory results in most cases this patient developed a systemic gonorrheal infection and some unusual complications as the result. Although gonorrhea as a systemic infection is considered uncommon, many authors are inclined to think that all cases are systemic in nature with local manifestations in the urethera.

CASE HISTORY AND PROGRESS

A white male age 54 came to the office complaining of a uretheral discharge, burning and smarting on urination, and aching steady pain in the right hip joint. These symptoms were present for four days. He gave a positive history of exposure about 12 days before. Upon physical examination, the skin was found to be free from eruptions or pigmentations. Eyes, ears and nose negative. Tonsils, somewhat enlarged with chronic inflammation. Lungs, no rales or consolidation. Heart, no enlargement, no murmurs. Abdomen, no points of tenderness. There was no enlargement of the superficial lymph glands. The systolic blood pressure was 160, the diastolic 90. No pathological reflexes. The meatal lips of the urethera were red, pouted, and edematous. They were glued together with a sticky, yellowish-white discharge. Separation of the lips disclosed the same material within the canal.

Microscopic slides of the uretheral discharge, by the Gram method, revealed countless pus cells and Gram-negative Diplococci both intra- and extra-cellular. Complete blood count disclosed a slight leukocytoses. The urine was turbid, contained mucus shreds and many pus cells. Wassermann, negative. The "Two Glass Test," indicated that the infection involved the anterior portion of the urethera. Diagnosis, Acute Gonorrheal Urethritis.

The patient was placed on sulfanilamide without any other form of treatment, on January 4, 1938. The following dosage scheme was employed: 20 grains 4 times daily for the first 2 days, 15 grains 4 times daily for the next three days and 10 grains 4 times daily for the next 8 days. Three days after beginning sulfanilamide, he returned to the office (Jan. 7, 1938), it was discovered at that time that the discharge had disappeared. No uretheral discharge could be expressed from the penis. However, prostatic massage at that time revealed pus cells but no gonococci, in the smear. There were no toxic signs as the result of sulfanilamide at this visit, he felt fine and was very much encouraged.

On January 13th, I was called to his home because it was impossible for him to come to the office. At this time he was bed-fast and complained bitterly of severe pain and tenderness over the tendon of Achilles of the left leg. This indicated an inflammatory condition of the bursa between the tendon and the os calcis, commonly known as the "Painful Foot of Gonorrhea." There was marked swelling with some redness extending from the toes up over the ankle to the knee joint. There was marked tenderness over the tendons of the Biceps Femoris, Semitendinosus and the Semimembranosus. Flexion and extension of the left ankle and knee joints produced excruciating pain. He complained of pain in the shoulder joints. His fingers on both hands were swollen, reddened and he was unable to close his fists. The aching pain in the hip which has been present since the very beginning of the condition, at this time became an almost unbearable pain accompanied by pain in the small of the back.

On January 15, he began complaining of a burning, smarting, and scratching feeling in the left eye. The next day a thin watery discharge made its appearance. The conjunctival sac was somewhat injected. Each day the secretion increased along with redness of the conjunctiva. About five days later the watery discharge became purulent in nature, the eye lids were reddened and swollen. Pain was not severe. Stained microscopic smears were negative for gonococci. On the 24th of January the right eye began to burn and smart. A thin non-purulent discharge made its appearance. On the 27th it had also become purulent. Smears from this eye were also free from gonococci.

He began complaining of sharp thoracic pain, located on the left side, on January 25th. Within about 4 to 5 days a zona appeared in the form of vesicles seated on slightly elevated erythematous bases, appearing in successive crops following the course of the intercostal nerves. This proved to be a gonorrheal herpes zoster.

With treatment his condition including all complications responded. He was symtom free except for mild rheumatic symptoms for a period of about a month and a half. On May 23rd he complained of pain in the left eye. There was great conjunctival injection but no discharge. The condition proved to be an iritis of gonorrheal origin. At the time of this writing he is symptom free, has gained weight and free from sequela.

DISCUSSION

In spite of the use of sulfanilamide, this man developed a systemic gonorrheal infection with unusual complications, namely, acute gonorrheal arthritis, metastatic gonorrheal conjuctivitis, herpes zoster and iritis of the left eye. Besides these there was posterior uretheral and prostatic involvement.

Arthritis and tenavaginitis seem to be relatively rare complications, at least they have found little recognition in the literature. It is estimated that about 3% of gonorrheal patients are known to develop arthritis, and probably a slightly higher percentage would include all the cases of systemic gonorrhea. It is interesting to note that tenovaginitis may accompany a complicating arthritis, but it can occur independently. Case reports are not numerous in the literature. Hecht(4), reported a case of independent involvement in 1913. Dunker(5), thinks the interest in independent gonorrheic tendovaginitis should grow. His reason for this is because many cases which defy treatment of all kind, can be readily healed with specific and conservative treatment when diagnosed. He recommends that in all rebellious cases a history must be carefully searched for gonorrheic infection. Independent tendovaginitis favors one and not several tendon sheaths, and involves those chiefly located in the wrist, ankle or knee. Rheumatic polyarthritis involves several sheaths or group of sheaths and may be located in any sheath of the body.

Metastatic gonorrheal conjunctivitis is an uncommon form of inflammation of the conjunctiva. It is excited by the presence of gonorrheal virus in the circulation, and like arthritis is the result of systemic gonorrheal infection.

Of the complications of gonorrhea, less has been written on the skin lesions than any extra-uretheral manifestation. Most text books omit lengthy descriptions of gonorrheic eruptions. Keratodermia blenorrhagica usually is mentioned because this seems to be the most common encountered generalized skin eruption of gonorrhea. Cutaneous eruptions are not common when compared with the wider prevalence of the condition in the genital organs, or with its occurrence in other tissues, notably the joints. At present no survey of the incidence of the cutaneous manifestations has been reported.

Lesions of the herpitiform nature receive very little mention in the literature. Jourdanet(6), reported a case of gonorrheal herpes in 1924, accompanied by arthritis and pulmonary congestion.

Two types of cutaneous lesions are described. There is the localized form, which is usually confined exclusively to the sites on and about the genitalia. This form is the result of direct infection of the skin by the gonococci or by the irritating discharge. The second is the generalized or exanthematous form. This form occurs as the result of dissemination of the gonococci or their toxins in the general circulation.

The exanthematous skin eruptions are divided into four groups:

1. Erythematous eruptions, with or without vesicle formation.

2. Urticarial erythema and erythema nodosum-like lesions.

3. Hemorrhagic lesions, with or without bullous formations.

4. Hyperkeratotic lesions.

In addition a papulovesicular type, another of herpetiform nature and finally a pustular lesion may occur.

Most authorities seem to think that the cutaneous lesions of gonorrhea are over-looked by the practitioner. Many skin conditions are due to gonorrhea are many times undiagnosed especially when resulting from old chronic cases. Although the gonococcus offers very little resistance and low viability to outside influences, they may be dormant within the body and are able to produce metastatic and local cutaneous lesions.

CONCLUSIONS

1. Sulfanilamide is a drug of great value in the treatment of gonorrhea, but is not infallible.

2. Sulfanilamide has bactericidal effect on gonococci, as shown by test-tube experiments.

3. The curative result of sulfanilamide is brought about by obtaining and maintaining a high concentration in the blood and tissues for several days, the optimum dosage being between 15 and 20 grains four times daily.

4. Cases of long standing independent tendovaginitis should be carefully searched for a gonorrheic history.

5. The interest in the cutaneous lesions of gonorrhea should grow.

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A Report on a Case of Schizophrenia

RICHARD H. YOUNG, M. D.,
Omaha.

Mr. and Mrs. W., a couple in their early thirties, were first seen in January, 1938, Mrs. W. with a black eye, Mr. W. tapping the arm of the office chair and gazing towards the ceiling in an indifferent manner. Briefly, the history was that Mr. W., a teacher in the Omaha schools, had been well until four years ago. In the summer of 1933, the patient had a period of excitement in which he developed the idea that other people were unfriendly towards him, were trying to harm him; he became sleepless, irritable and difficult to manage. At that time, he was thought to have suffered from the heat, and the vapors of the summer sun, and when, with the passage of time, the more disturbed features passed, he tried again to provide for his wife and child. In the past four years, he has been thought to be "nervous," but was reassured that time would heal his difficulties. Instead, there have been repeated temper outbreaks, when he would abuse his wife, a marked difficulty in thinking with a blocking of thoughts that would interrupt his chain of thought, and a preoccupation with false beliefs centered about his sexual feelings. Recently, his wife had allowed herself to become impregnated, in the hope that another child would stir him to a better performance. The husband finally, in a fit of temper that seized him without apparent provocation, had struck his wife, discoloring the skin about her eye. Because of her increasing fears for her own safety, she threatened her husband with legal proceedings unless he underwent a psychiatric examination.

The above history, with the examination, revealed that we dealt with a schizophrenic reaction of four years' duration.

BASIS FOR DIAGNOSIS

Schizophrenia, or dementia praecox, was diagnosed because of:

(1) *Oddities of Behavior.* The patient was very vague in his talk, and would frequently ask questions that were irrelevant. In the midst of a sentence, he would stop, stare blankly ahead and seem lost, as though all thoughts had deserted him. At times, he would whistle softly, with an unconcerned air, as though he were quite at ease; this, in spite of an obvious tenseness. The history related the periodic outbursts of unprovoked temper.

(2) *Delusional Beliefs.* This man had the belief that others were unfriendly towards him. In addition, there was the belief that other people were trying to excite him sexually, a thought that was dangerous for his associated teachers.

(3) *Changes in Usual Pattern of Behavior.* The patient had become very seclusive, and avoided social experience. The school work, which made few demands, was poorly done. There was also a loss of sleep and weight.

The above features of a schizophrenic illness are frequent associates of this sickness. The patient with dementia praecox is queer, odd, empty, and twisted in his ideas. The false beliefs are usually bizarre, and obviously delusional. Hallucinations, a frequent schizophrenic symptom, were not present in this case.

THE MEDICAL IMPORT

The above case presents a medical and sociological tragedy. The medical tragedy lies in the fact that now, after four years of sickness, this man's hope of recovery has been reduced about 50%. In years past, not more than 25% of all schizophrenic patients experienced a remission, but now, with the insulin shock method and the use of convulsions induced with metrazol, we find a high remission rate among those who are treated early in the disease. During the first year of our use of insulin, 76% of our cases with psychotic symptoms of less than six months' duration, showed a remission, and only 20% of cases with symptoms of over eighteen months' duration showed remission. These are figures that stress the urgency of early diagnosis and treatment.

It is important that bizarre personality symptoms not be passed off as due to the heat, a minor focus of infection, a "touch of the flu," or part of a minor indisposition. It is also important that one's hopes be not placed in rest and time, because these two factors only serve to fix the psychotic symptoms. An active plan of therapy that is started as soon as possible, is most necessary.

SOCIOLOGIC ASPECTS

The sociologic aspect of this case involves both the family and society. The wife is endangered and unwisely burdened by another pregnancy. Marriage and child-bearing are two of the poorest psychotherapeutic attempts. The wife and family will need the help of society to provide for their wants. This man will be one of the twenty thousand who every year are hospitalized for this disease, and in the past, the average period of hospitalization has been sixteen years. Much of the taxpayers' money might be conserved were these cases available for treatment earlier. In this case mentioned, it is too late in the disease to expect much from treatment. It is with an uneasy feeling that one looks back the past four years and considers the dangers to society that have been risked. Problems and delusional beliefs of a sexual nature often provoke attacks of a type frequently described in the newspapers. That a man suffering from this sickness should have been teaching in our public schools, a man suspicious, delusional, and burdened with marked difficulties in thinking, is both remarkable and unfortunate.

This case is one of many tragedies of personality dissolution, a type of case that occupies more hospital beds than heart disease and tuberculosis combined. It is presented because of features that should be part of the physicians' knowledge of disease, and because of the hope that our recent advances in treatment will offer a new future to those whose disease is recognized and treated early.

Patient—You remember when you cured my rheumatism a year ago, don't you doctor? You told me not to get myself wet?

Doctor—Yes, I remember.

Patient—Well, I just wanted to ask you if you think it's safe for me to take a bath now?

FEET ACHE OFTEN CAUSED BY INCORRECT CARE IN CHILDHOOD

A large percentage of foot troubles which adults endure are the direct result of careless care of the feet during the first few years following birth, Beulah France, R.N., declares in her article "Fitting Feet for Life" which appears in the April issue of *Hygeia*.

Proper care of the child's growing feet incorporates the following: Stockings and shoes should be a little longer and a little wider than the child's foot, and as soon as the shoe fills up, that pair should be discarded.

White shoes are the most practical for young children. White shows the dirt quicker and is therefore safer than a darker color which conceals the dirt. They can be scrubbed and made clean without danger of removing the color. They should be scrubbed because infants enjoy direct contacts between foot and mouth.

At teen-age time, or perhaps even a bit earlier, the boy and the girl concentrate their thoughts largely on appearance. But beware, for the feet are still growing. So, although there has been supervision of shoe purchases throughout the first twelve years, if now young people are allowed to choose their own footwear, mistakes may be made which will go far toward upsetting all the excellent foundations which were laid by careful parents.

Children's shoes should be changed often. Three or four pairs had better be kept and used alternately so that they may be well sunned and aired.

For those who are fortunate enough to have escaped any foot difficulties several suggestions are given: Wear only such shoes as will give all-day comfort. The really well fitting shoe will leave your mind free from foot thought for twelve hours or more. Wear a different pair of shoes tomorrow from those which were worn today.

If you stand on your feet a great deal, soak them every night in warm water before you go to bed. Rub them well with alcohol after they have been bathed, and dry well with a turkish towel.

If your arches are weak, consult an orthopedic surgeon. He will tell you what exercises to take to strengthen them. Never wear shoes with heels that are even slightly run over. Never let the soles curve down beneath the ball of your foot while curling up on the outer edges. Never lend or borrow either slippers or shoes.

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THE JOURNAL SENDS THE SEASON'S GREETINGS TO ALL ITS READERS. MAY YOUR CHRISTMAS BE A HAPPY ONE.

Christmas

Moonlight flooding desert wastes,
Trotting, tinkling donkey train,
Snowy, sparkling mountain peaks
In the night.

Rhythmic, restful camel bells,
Plodding, dusty charvadars,
Humping, swaying bales of freight
Hour after hour.

Self-same trails that Magii trod,
Slowly following lustrous star,
Self-same Christ both then and now
For us all.

Herrick Black Young

EDITORIAL

"MEDICAL FACTS"

Under this caption 115 weekly newspapers bring to thousands of Nebraska homes information on the various phases of health and disease under the auspices of the Nebraska State Medical Association. The total number of readers thus reached is estimated conservatively at six hundred thousand. The articles are written by Dr. George Covey of Lincoln, in a style as interesting as it is instructive. That these articles are well received is evidenced by the fact that the demand for them is constantly increasing. The column is sent through the central office of our Association, only upon request of publishers.

It must be understood that, generally speaking, medical copy is seldom considered preferential material among editors. This is especially true when such copy is submitted free. Those of us who have had the disagreeable duty of approaching the gentleman at the "desk" with "educational stuff" have on more than one occasion observed the distrustful look of ye editor. "Beware of the Greeks bearing gifts" is an old slogan in newspaper circles. That "Medical Facts" is now a permanent feature in over one hundred newspapers in this State is a compliment both to the writer of the excellent articles and to the personnel of the central office responsible for their distribution. The contacts, our Executive Secretary states, have been made in every instance through the doctors in the various communities. Judging from comments thus far received, the "Facts" have been accepted with enthusiasm by the readers. They reflect credit upon the profession in these communities in that they afford access to wholesome information on topics of vital interest to the residents of these areas.

In view of their popularity it should take but little effort on the part of our members to acquaint the publishers not now using the service with the quality of the material and its ready availability. It would be a pity to neglect its further extension. "Medical Facts" should cover the entire state of Nebraska.

POST-GRADUATE FACILITIES FOR NEBRASKA

It is a long time since physicians in this territory in need of practical post-graduate study were compelled to leave everything behind and travel thousands of miles to sit in the amphitheaters of the great medical centers. Today, really all that a doctor needs in order to receive post-graduate work is to express his will, and with but little inconvenience to his practice and his purse, such post-graduate facilities are readily made available. Refresher courses for one thing are brought to his very door. These are systematized with the view of affording a general perspective in the branch of medicine chosen for the particular locality. All one has to do is attend these lectures.

The Speakers' Bureau deserves much credit and support from the profession for its inestimable good along the lines of post-graduate medical education.

Yet no mention of this phase of medical education would in any way be inclusive if we were to omit the Omaha-Midwest Clinical Society and its benefits, which extend to every community in the Missouri Valley. This institution has extended post-graduate facilities to thousands of physicians and surgeons in the Middle West. At the last annual session, over one thousand doctors participated in the lectures, clinics, panel discussions, etc. Talent, as usual, was brought from all sections of the country, the caliber of teachers remaining unexcelled. The Omaha-Midwest Clinical Society is to be congratulated upon another year of successful activity. It is more than an Omaha institution; it is an important link in the chain of medical education in this State.

ANNOUNCEMENTS

The next annual session of The Nebraska State Medical Association will be held in Grand Island May 2, 3, 4, 1939. If you wish to read a paper before this Assembly please communicate immediately with Dr. R. B. Adams, Secretary, 416 Federal Securities Bldg., Lincoln, Nebr.

SCIENTIFIC EXHIBIT
American Medical Association

Application blanks are now available for space in the Scientific Exhibit at the St. Louis Session of the American Medical Association, May 15-19, 1939. Attention is called to the fact that the meeting is a month earlier than usual, and applications close January 5, 1939. Blanks will be sent on request to the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn St., Chicago, Ill.

EXAMINATIONS
American Board of Obstetrics and Gynecology

The next written examination and review of case histories for Group B candidates will be held in various cities of the United States and Canada on Saturday, February 4, 1939, at 2:00 p. m. Application for admission to this examination must be filed on an official application form in the office of the Secretary at least sixty days prior to this date, (or before December 4, 1938).

The serum committee has on hand, polio, scarlet fever, measles, mumps and whooping cough convalescent human serum. Any physician desiring these sera for treatment or prevention, can obtain same by applying to: Dr. W. C. Harvey, Gering, Dr. Paul M. Bancroft, Lincoln, Dr. Geo. B. Salter, Norfolk, Dr. A. E. Watson, Grand Island, Dr. E. Stevenson, North Platte, Dr. E. P. Leininger, McCook and Dr. C. M. Pierce, Chadron. This serum can also be obtained from the undersigned in Omaha.

Floyd Clarke, M. D.,
Chm. Convalescent Serum Committtee.

For further information and application blanks, address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh (6), Pa.

Paul Titus, Secretary.

AUXILIARY NOTES

Dear Auxiliary Members:

Today, as never before, we find in the activities of most organizations that of Public Relations. Civic groups find they must work with other like groups to promote their interests to the best advantages. Religious groups know they must cooperate with one another in furthering their cause; and we too, the Medical groups realize that much health education, study and information is being done by numerous non-medical groups and that we must join our forces so that this information may have sound medical direction. We may not set the speed we shall go but we can set the direction. One leader of a Public Affairs group said, "Public Relations Programs have always been too big—take one thing at a time and do it well." And then she said this—"Education must come first." This is also our medical group's first step, education, and we are starting with ourselves. Who other than the doctor's wife is sincerely interested in his profession and wants it to be thought of by the laity in correct terms? With all the adverse and often slanderous opposition today, we should pledge ourselves to be informed, unselfish, fair and loyal. The county Auxiliary is our best means of reaching these goals. When we, with our own groups, have achieved the generous and willing attitude, we can do something for our community. What responsibility lies on the shoulders of the doctor's wife in the rural community! She, who is an outstanding personage and often the one most relied upon in that community, has so many opportunities. None of us are exempt, but must be alert to our opportunities, and when we have made the essential adjustments and our own homes are set in order we may look to our neighbors.

Very sincerely,
Your Public Relations Chairman,
Mrs. E. S. Wegner, Lincoln, Nebr.

NEWS AND VIEWS

Among Nebraskans attending the recent Sessions of the American College of Surgeons were: Drs. F. H. Morrow and C. A. Allenburger of Columbus, Dr. Mason Lathrop of Wahoo; Dr. Theo. A. Peterson of Holdrege. Fellowships in The College were bestowed upon: Dr. John Meredith of Lincoln, Dr. H. A. Copsey of Alliance, and Dr. W. J. Arrasmith of Grand Island.

Drs. A. E. Bennett, Lynn Hall, Willis D. Wright and Murray Lewis of Omaha, and Drs. J. C. Nielsen and A. H. Fechner of Hastings were on the program of the Kettering Institute for Medical Research in St. Louis in November.

To celebrate the fifty-second anniversary of the beginning of his professional career in Omaha, Dr. J. P. Lord entertained two hundred fellow-physicians at a tea.

Dr. J. A. Waggoner of Humboldt, the oldest physician in active practice in the state, celebrated his 86th birth-anniversary October 6.

Dr. and Mrs. J. J. Davis of Lincoln, celebrated their fifty-fourth wedding anniversary on Saturday, October 8. Dr. and Mrs. Davis were married October 8, 1884, at Havana, Ill., and came directly to Lincoln where they have resided ever since. Dr. Davis, who was born and reared in eastern Pennsylvania, came to Lincoln in 1882.

Dr. I. N. Pickett of Odell, who has practiced medicine 60 years, 55 of them in Gage county, was presented with a badge of honor the first of the week by the Gage County Medical society for his 50 years of medical service in the county. The presentation was made by Drs. F. W. Buckley and J. C. Waddell of Beatrice.

Dr. A. L. Miller of Kimball, president-elect of the Nebraska Medical association and a state senator, is giving a series of talks on "Medicine of Tomorrow."

Dodge county supervisors and a special hospital building committee recently decided to pay $4,000 for a 7½ acre tract at Twenty-third and C streets, just east of the Masonic-Eastern Star home, as a site for the county community hospital.

Dr. Joseph Kuncl of Alliance was elected a vice president of the Nebraska Society for Crippled Children at the annual meeting of the organization in Omaha recently.

If a bill to be submitted to the coming legislature becomes law, appplicants for marriage license will be required to file with the license bureau certificates from a reputable physician showing that the applicants are free from "contagious syphilis." The proposed legislation will be backed by the public health committee of the Lincoln chamber of commerce junior division, supported by the entire state organization.

The junior division here has among its membership on the public health committee, three members of the Lancaster County Medical association. They with the other committee members have been studying health laws in other states, and were largely responsible for the success of the anti-syphilis campaign sponsored with the city health department during the past year. —*Lincoln Star, Nov. 2.*

Dr. J. W. Duncan, chief of staff and chief surgeon at the Douglas county hospital since 1930, recently tendered his resignation in a letter to County Commissioner Leonard Bergman, chairman of the hospital committee. For the first time the hospital medical staff, instead of the county board, chose its own chief of staff, when Dr. G. Alexander Young was elected.

According to a recent press report the government health program calls for:

1. A 200 million dollar expansion of preventive public health services and broadening of the social security act to increase provisions for maternal and child care.

2. A hospital expansion program to increase the facilities available for medical care.

3. Extension of medical assistance now available to low income families.

4. Development of a plan of insurance against loss of wages during sickness.

Funds for the expansion drive would be derived from federal, state and local sources. The federal government furnishing roughly one-half. The program would be organized on a 10-year basis. Economists estimated 850 million dollars would be the peak annual expenditure.

(STATE) DEPARTMENT OF HEALTH

Lincoln, Nebraska

MORBIDITY SUMMARY—PRINCIPAL DISEASES

	1938			1937		
	Oct.	Sept.	Total to Date	Oct.	Sept.	Total to Date
Chicken-pox	26	3	1248	17	7	866
Diphtheria	17	15	135	12	5	66
Influenza	2	0	136	0	0	451
Measles	9	11	2541	9	7	452
Meningitis, C. S.	0	2	37	3	0	33
Poliomyelitis	1	0	7	49	71	203
Scarlet Fever	49	47	1088	35	22	1901
Smallpox	1	1	179	0	4	163
Tuberculosis	17	15	173	18	14	169
Typhoid Fever	5	4	19	2	2	18
Whooping cough	24	45	459	27	22	476
Gonorrhea	72	72	759	121	98	876
Syphilis	47	55	624	63	73	764

SPEAKERS' BUREAU

The following addresses have been arranged through the Speakers' Bureau of the Educational Committee of the Nebraska State Medical Association, September, October, and to November 15, 1938.

SCIENTIFIC PROGRAMS

Date	Place	Organization Addressed	Speaker	Title of Address
Sept. 13	Norfolk	Madison Six-County Medical Society	Dr. J. F. Gardiner Omaha	The Recognition and Treatment of Some of the More Common Endocrine Disorders.
Sept. 14	Columbus	Platte Loup Valley Medical Society	Dr. N. F. Hicken Omaha	Acute Infections of the Mouth and Neck—Their Diagnosis and Management.
Sept. 14	Columbus	Platte Loup Valley Medical Society	Dr. Manuel Grodinsky Omaha	The Fascia and Fascial Spaces of the Head and Neck and Their Relations to Infections.
Sept. 29	Callaway	Custer and Dawson County Medical Societies	Dr. J. E. M. Thomson Lincoln	Fractures of the Elbow, Forearm and Wrist.
Sept. 29	Callaway	Custer and Dawson County Medical Societies	Dr. H. F. Johnson Omaha	Fractures of the Shoulder Girdle and Humerus.
Oct. 17	Nebr. City	Otoe County Medical Society (and dentists)	Dr. W. L. Shearer Omaha	The Swing of the Pendulum as It Relates to Focal Infections.
Oct. 19 (Afternoon)	Tecumseh	3d Councilor Dist. Medical Society	Dr. Z. N. Korth Omaha	Diagnosis and Treatment of the More Common Dermatoses.
Oct. 19	Tecumseh	3d Councilor Dist. Medical Society	Dr. H. B. Hunt Omaha	Radium Therapy in the Treatment of Cancer. (Also discussed cholecystograms).
Oct. 19	Tecumseh	3d Councilor Dist. Medical Society	Dr. J. D. Bisgard Omaha	Some Considerations in the Treatment of Gallbladder Disease.
Oct. 19 (After Dinner)	Tecumseh	3d Councilor Dist. Medical Society	Dr. W. R. Hamsa Omaha	Fractures In and About the Elbow.
Oct. 19	Tecumseh	3d Councilor Dist. Medical Society	Dr. R. D. Schrock Omaha	Fractures In and About the Wrist.
Oct. 20	Superior	7th Councilor Dist. Medical Society (Annual Meeting)	Dr. R. J. Stearns Omaha	The Etiology, Symptomatology and Treatment of Diseases of the Cervix, Exclusive of Those Secondary to Birth Injuries.
Oct. 20	Superior	7th Councilor Dist. Medical Society	Dr. H. S. Morgan Lincoln	The Etiology and Symptomatology of Injuries to the Birth Canal Due to Birth Injuries.
Oct. 20	Superior	7th Councilor Dist. Medical Society	Dr. Maurice Grier Omaha	The Treatment of Injuries of the Birth Canal Due to Birth Injuries.
Oct. 20	Grand Island	Tri-County Medical Society	Dr. H. F. Johnson Omaha	Diagnosis of Chronic Bone Lesions.
Oct. 20	Kearney	9th Councilor Dist. Medical Society	Dr. W. L. Sucha Omaha	Acute Traumatic Injuries.
Nov. 9	Columbus	Platte Loup Valley Medical Society	Dr. C. W. McLaughlin Omaha	The Acute Surgical Abdomen in Infancy and Childhood.
Nov. 9	Columbus	Platte Loup Valley Medical Society	Dr. Clayton Andrews Lincoln	The Acute Surgical Abdomen in Adults.
Nov. 14	Wahoo	6th Councilor Dist. Medical Society	Dr. J. E. M. Thomson Lincoln	Fractures of the Forearm.

MCH REFRESHER COURSES

Date	Place	Organization Addressed	Speaker	Title of Address
Sept. 8	Alliance	12th Councilor District	Dr. F. S. Clarke Omaha	Professional Title "Immunology and Disease Prevention." Lay Title "Pounds of Prevention."
Sept. 15	Scottsbluff	12th Councilor District	Dr. Frank Murphy Omaha	Professional Title "Occiput Posterior." Lay Title "The Need for Prenatal Care."
Sept. 22	Alliance	12th Councilor District	Dr. Palmer Findley Omaha	Professional Title "Puerperal Infection." Lay Title "Martyred Mothers."
Oct. 6	Scottsbluff	12th Councilor District	Dr. J. E. Henske Omaha	Professional Title "Rheumatism and Heart Disease in Childhood." Lay Title "Heart Diseases in Children."
Oct. 13	Alliance	12th Councilor District	Dr. David Findley Omaha	Professional Title "Gonorrhoea Complicating Pregnancy." Lay Title "Why Babies Die in Childbirth."
Oct. 20	Scottsbluff	12th Councilor District	Dr. Paul Bancroft Lincoln	Professional Title "Care of Premature Infant." Lay Title "Care of Premature and Newborn Infant."
Nov. 2	McCook	10th Councilor District	Dr. E. C. Sage Omaha	Professional Title "Toxemias of Pregnancy." Lay Title "Public Health Aspects of Obstetriics."
Nov. 9	McCook	10th Councilor District	Dr. G. E. Robertson Omaha	Professional Title "Medical Emergencies of Childhood." Lay Title "Medical Emergencies of Childhood."
Nov. 16	McCook	10th Councilor District	Dr. F. S. Clarke Omaha	Professional Title "Prevention of Diseases of Childhood." Lay Title "Pounds of Prevention."

PRESS COMMENTS

The Tribune, Hastings

LESS WHEAT

"The best thing that could possibly happen to this country would be if we never grew another kernel of wheat."

A former McCook physician is said to have made that statement 25 years ago. He was called a heretic for saying it, but he used to say it often, according to the McCook Gazette.

The man has been away from McCook for several years, but he came back this fall to look after land holdings and he saw evidence that he need not change his stand though there is still much wheat in the McCook region.

The physician, in traveling around McCook during his visit, saw thousands of acres of forage crops, the new sorghums withstood drouth and will provide feed on farms which could not support livestock this year without them.

He reminisced:

"I can remember back in the good old days that those who could pay their doctor were those who did not put their eggs all in one basket. They were the ones who grew some feed, had a few cows, hogs and chickens and gambled on the balance in corn. They always had an income, even if it was small, and consequently were able to pay their bills."

The doctor was speaking figuratively when he said there should be no wheat in this region. But it sometimes takes figurative terms to emphasize a point. We won't dispute the man's right to get as figurative as he pleases on the subject of need for greater diversification of farming.

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Omaha World-Herald

TUBERCULIN TESTS

Recently the Nebraska Tuberculosis association completed tuberculin skin tests of seniors in four Omaha high schools. Pupils submitted themselves voluntarily to the test, which revealed positive reactions in approximately one-fifth of them.

This was a useful service in the interests of good health. There is nothing alarming in the results, for the test does not mean that those with positive reactions are victims of the ailment. It only shows that conditions exist that make for the possibility of tuberculosis developing, and points to the wisdom of regular x-ray tests to determine whether tuberculosis has developed.

Warned in time, the potential victim of the disease may take the necessary health steps to ward it off.

The tests are an example of preventive medicine in its most useful work. The tuberculosis society and the high school pupils who took the tests are to be commended for co-operating in a measure distinctly in the interests of improvement in public health.

Omaha World-Herald

INSURANCE FOR HOSPITAL CARE

Nebraska doctors through their state medical association have taken a progressive and intelligent step in setting up their own voluntary insurance plan for group hospital care.

What they have done, in simplest terms, is to recognize the existence of a public demand for such insurance and to undertake the satisfying of that demand themselves. Whatever the merits of the argument over group medicine, health insurance, "socialized medicine" and the like, the dispute cannot permanently obscure the fact that this demand does exist. By recognizing that it does, and taking steps to meet it, the Nebraska doctors choose the best possible course to ward off that poliitical control of medicine which they fear.

In the evolution of medical care, two potential evils are apparent: Political control, and excessively centralized administration. Neither patient nor doctor, we believe, wants a system in which all the orders come from Washington or even from Lincoln. Nor does any real demand exist for a revolution in our present system of medical care.

That is not to say, however, that certain changes are not desired. One section of the population undoubtedly wants some method of insuring itself against the financial shocks of unexpected hospitalization. Another wants some method of insuring against the cost of medical care. In view of the experience in other countries it is reasonable to assume that these demands can be met without destroying the basic relationship between individual doctor and individual patient, and without excessive domination of medical practice by government.

Instinctively, people look first to the doctors to make these changes.

SOCIETIES

Secretaries of county and district societies are requested to send in the minutes of their meetings to The Editor, 220 Medical Arts Bldg., Omaha.

REGULAR MEETING
October 11, 1938

The regular meeting of the **Omaha-Douglas County Medical Society** was held on Tuesday evening, October 11, in the Medical Arts Auditorium. President Uren called the meeting to order at 8:00 p. m. The minutes of the regular meeting of September 27, were read by the secretary, and as there were no corrections or additions, they stand approved as read.

A Resolution on the passing of Dr. Rudolph Rix was read by Dr. J. E. Simpson. Dr. Rix died July 14, 1938.

President Uren called attention to the meetings of the Omaha Mid-West Clinical Society which are to be held at the Paxton Hotel, October 24 to 28 inclusive. He urged every member of the Society to register, and referred especially to the joint meeting of the two Societies on Wednesday evening, October 26, at 8:00 o'clock at the Paxton Hotel.

The scientific program was opened with a case report by Dr. F. J. Murray. "Unusual Obstruction of the Bowel with Inguinal Hernia," discussion by Dr. F. C. Hill.

Dr. R. D. Schrock's subject, "Diagnosis of Bone Tumors," was discussed by Dr. James W. Martin and Dr. Charles P. Baker. The discussion pointed out the importance of obtaining as much help as is available in the diagnosis of bone tumors; the histology and the new growth must be considered, and the assistance of the roentgenologist and the pathologist are an absolute necessity.

Dr. C. A. Owens closed the program with his talk on "The Value of Heat Therapy in Sulphanilamide-Resistant Gonorrhea," discussed by Dr. Willis Wright and Dr. F. Lowell Dunn. In cases where either sulphanilamide or fever therapy alone has failed to effect a cure, the combination of the two has proven successful in effecting a cure in many such cases. It is the hope of these physicians that with the administration of moderate doses of the drug and a low degree of temperature that a successful method has been found to effect complete cures in the treatment of gonorrhea.

The regular meeting of the **Omaha-Douglas County Medical Society** was held in the Medical Arts Auditorium on Tuesday, November 8, 1938, at 8 p. m. In the absence of the President, Dr. Claude T. Uren, president-elect, Dr. Earl C. Sage presided.

Dr. E. L. MacQuiddy, Chairman of the Legislative Committee, gave a brief resume of the new act which is to be presented to the coming session of the Legislature in Lincoln. A copy of the bill as it now stands was given to each one present. This bill should be of vital importance to every physician in the community as it seeks to establish a health district in Omaha, combining and consolidating the city and county health departments of Omaha. The bill in its present form is open to changes and recommendations. Dr. MacQuiddy urges that inasmuch as this bill is not the sole responsibility of the Legislative Committee and as the Society is to expend $300.00 to properly present the bill to the Legislature, that each one familiarize himself thoroughly with the bill and do all in his power to help in getting it passed. Suggestions for betterment of the bill are welcome.

The scientific program was opened by Dr. Frank Conlin. His talk, "Differential Diagnosis of Intrathoracic Tumors," was discussed by Dr. Harry Stokes and Dr. Howard B. Hunt.

The guest speaker, Dr. F. W. Hartman, Pathologist and Director of Research Laboratories, Henry Ford Hospital, Detroit, was introduced by Dr. A. E. Bennett. Dr. Hartman's subject was "Anoxia, an Everyday Medical Problem: A Consideration of the Physiology, Pathology and Therapy." After the close of the meeting, which adjourned at 10:15 p. m., Dr. Hartman demonstrated and explained in detail the operation of a new type of oxygen tent, using liquid oxygen.

The **Adams County Medical Society** met in their regular session at the Ingleside State Hospital on November 3rd with thirty-eight members and visitors present.

The program consisted of a paper by Dr. C. A. Owens of Omaha, on "The Use of Sulphanilamide in Urology" and one by Dr. H. E. Anderson, of Omaha, on "Use of Cystography in Placenta Previa."

These were followed by considerable discussion.

Following the business session, the meeting was adjourned until December 7, 1938.

The **Adams County Medical Society** met in their regular session October 5 at the Ingleside State Hospital with about forty members and visitors present.

Following the dinner there was presented one of the fiinest scientific programs of the year. Dr. F. Lowell Dunn and Dr. A. E. Bennett of Omaha presented a joint program on fever therapy; Dr. Dunn covered the medical aspects and Dr. Bennett, the neuropsychiatric. Dr. A. H. Fechner, of the Ingleside Staff, who is in charge of the fever therapy there, gave a brief resume of the work done up to the present time. Following his talk motion picturs were shown by Dr. Bennett, demonstrating the technic of the machine, and handling of the patient together with various patients before and after treatment.

Following a short business meeting, the meeting was adjourned until November 2nd.

W. L. Shaw, M. D., Secretary.

The regular meeting of the **Lancaster County Medical Society** was held November 1, 1938. President C. F. Andrews, presiding. About sixty members were present. The minutes of the previous meeting were read and approved.

Dr. Richard F. Richie read the first paper of the evening entitled "Hysteria." An individual who answers the difficulties of his environment by a negative reaction, has hysteria. One must differentiate from disseminated sclerosis, paralysis, agitans, and malingering. Treatment by early training, and guidance against negative emotions in children, and psychotherapy are valuable. It is well for the doctor to avoid stressing any areas of anesthesia. Discussion followed by Dr. P. A. Royal who said this was an important subject well presented. Dr. Rex Strader advised that the doctor investigate the past personality. Dr. Richie closed the discussion by citing two cases of hysteria in children.

The second paper was on "Modern Gastric Surgery" by Dr. Roy Whitham. He discussed in a rather academic fashion the surgical procedures now used in treating lesions of the stomach. Hypertrophic pyloric stenosis is treated by Rammstead operation. Peptic ulcer responds best to medical treatment with surgery only for the complications of perforation, hemorrhage, or obstruction. Malignancy requires gastric resection. A series of lantern slides demonstrated nicely the customary operative procedures. Case histories were then presented to illustrate typical cases. Discussion followed by Drs. H. B. Morton and H. E. Flansburg. Dr. Rowe pointed out that hypertrophic pyloric stenosis does occur in adults and is a very important clinical condition.

A young surgeon from London, Mr. Monroe, was kind enough to make a few remarks on the panel system of medicine in England.

The election of the following doctors to membership in the society was unanimous: Drs. V. J. Reynolds, A. L. Emery, Robert W. Johnson, and Porter S. Cannon. The transfer of Dr. J. A. McCleary was accepted by a unanimous vote. The transfer of Dr. Edna Schrick to the Lorain County, Ohio, and of Dr. Alice Fuller to Hennepin County, Minnesota, were read.

The motion was made, seconded, and carried that we refuse the proposal for the use of our photographs for commercial display.

Meeting adjourned at 9:30 p. m.

Everett E. Angle, M. D.

The regular meeting of the **Lancaster County Medical Society** was held October 18, 1938, Dr. Clayton F. Andrews, President, in the chair. About forty members were present. Due to the absence of the secretary from the city, Dr. W. W. Carveth was appointed to record the minutes.

The first paper of the evening was given by Dr. Grace Loveland, "Statistics from the Maternal Health Clinic." This clinic was opened March 8, 1935 at the Y. W. C. A. Due to the lack of funds it was closed from June to November 1936. A number of charts were presented to illustrate the work that is being done. A total of 280 cases have been handled. The clinic tries to maintain the standards of the American League, being governed by a medical advisory board of twelve physicians, all members of the Lancaster County Medical Society. Discussion followed by Drs. F. F. Teal and H. S. Morgan.

The second paper was presented by Dr. C. Fred Ferciot on "Metabolic Processes of the Skeletal System." This was a discussion of the metabolic activities of the bone marrow and the osseous system in relation to the functions of the organism as a whole. Stressing the active role of the skeletal system in acting as a storehouse for necessary chemical elements and the effect of various systemic disorders upon it. Drs. C. F. Andrews, E. W. Hancock, and J. E. M. Thomson discussed the paper.

Applications for membership of Drs. A. L. Emery, V. J. Reynolds, Robert Johnson, and Porter S. Cannon were read for the second time and referred to the board of censors.

Meeting adjourned 9:10 p. m.

W. W. Carveth, M. D.

The **Sixth Councillor District** of the Nebraska State Medical Association met in the Wahoo Methodist Church Monday, November 14, 1938, dinner at 6:30. Dr. E. G. Brillhart of Shelby, president, presided at the scientific program which was as follows: Medicine of Tomorrow, by Dr. A. L. Miller, president-elect of the Nebraska State Medical Association; "Treatment of Fractures of the Upper Extremities" by Dr. Herman Johnson of Omaha; Motion Pictures of Fractures of the Spine by Dr. J. E. M. Thompson of Lincoln.

B. N. Greenberg, York, Sec'y-Treas.

The **Seventh Councillor District** met at the Hotel Nebraskan in Superior, Thursday, October 20, 1938. The afternoon program consisted of papers read as follows: Dr. R. J. Stearns of Omaha: Treatment of Diseases of the Cervix; Dr. M. E. Grier of Omaha: Treatment of Injuries of the Birth Canal; Dr. H. S. Morgan of Lincoln: Injuries of the Birth Canal.

At the evening meeting Dr. Homer Davis, president, and Dr. A. L. Miller, president-elect, of the Nebraska State Medical Association spoke. Dr. H. H. Humphrey of Daykin was elected president for the ensuing year, and Dr. Rudolph Decker was reelected secretary.

The **Four-County Medical Society** met at the Methdist Church in Burwell, Thursday evening, October 13 for dinner at seven o'clock. The paper of the evening was given by Dr. William Hamsa of Omaha: "Disorders of the Foot."

The **Tenth Councillor District** met at the Midway Hotel in Kearney October 20, 1938. Dr. Juul C. Nielsen of Ingleside was elected president, and Dr. Geo. L. Pinney, secretary-treasurer. Speakers for the afternoon session were Drs. Homer Davis, president, and Dr. A. L. Miller, president-elect, of the Nebraska State Medical Society, and Dr. K. S. Hohlen of Lincoln, delegate to the American Medical Association. Dr. R. S. Wycoff, Lexington, Dr. C. G. Freed, Denver, Colo., Dr. R. C. Spirer, Hastings, Dr. E. A. Watson, Grand Island, and Dr. W. L. Sucha, Omaha. Dr. Sucha spoke on "Acute Traumatic Injuries."

The **Richardson County Medical Society** and the auxiliary had a joint dinner at the Presbyterian church here last night.

After the dinner, the groups adjourned to the home of Dr. and Mrs. C. L. Hustead, the auxiliary for a social session and the doctors for a program.

Dr. C. P. Fordyce of St. Joseph, former Falls Citian, gave a paper on "Eye Hazards."

BOTH BOUNCED

Doctor: "I don't like to mention it, but that check you gave me has come back."

Patient: "Well, that sure is funny, Doc, so did my lumbago."—*Mutual Magazine.*

HUMAN INTEREST TALES

Communications bearing human appeal are solicited. They should be addressed to The Editor, Nebraska State Medical Journal, 220 Medical Arts Bldg., Omaha.

Dear Doctor H.:

I am writing in regard to your last notice that I have received from you. I am sorry for having you waiting like this, but speaking as a man to man, would you pay for something that you haven't?

When I brought my wife for operation I was willing to pay any price for her health. She has it now good as ever, but she has left me two months after leaving the hospital. She has a job and it is up to her to take care of her bills. If a man isn't good enough to live with that ought to be same with debt I caused for her sake.

I am sorry this has turned out this way. I have never in my life beat a man out of what's coming to him. If she would come back I would be only too glad to pay you what I owe you, but as it is, it is all up to her to take care of herself.

Yours sincerely,

Dr. C. L. Phillips of Superior is reported ill.

Mrs. C. L. Egbert of Hastsings toured the East in October.

Dr. E. C. Pinkney, formerly of Wymore, has located in Superior.

Dr. Willard N. Blome recently of Stromsburg has located in Silver Creek.

Dr. and Mrs. Fred Wurtele of North Platte vacationed in Denver in October.

Dr. O. F. Lang of Falls City spent two weeks in Rochester in October, studying surgery.

Dr. John S. Broz of Alliance suffered minor injuries in an auto accident near Hay Springs.

Dr. Charles Root of Bassett was reported seriously ill in a hospital at Ainsworth early in November.

Dr. D. H. Westfall of Springview is planning on locating in Polk, according to local press reports.

Dr. and Mrs. W. P. Wherry of Omaha returned recently from a two-weeks cruise to the West Indies.

Dr. Thornell Mauer of Omaha attended the Interstate Medical Assembly in Philadelphia in October.

Dr. Robert Best of Holdrege is reported to have bagged a 275 pound buck on a recent hunting trip in Colorado.

Dr. C. C. Tomlinson of Omaha attended the Southern Medical Association convention in Oklahoma City in November.

Dr. O. E. Wilson, formerly of Madison, has accepted an appointment with the CCC camp. He is stationed in South Dakota.

Dr. George Ainlay of Fairbury returned recently from Washington where he took special work in the Army Medical School.

Dr. J. A. Henske of Omaha, attended the annual meeting of the American Academy of Pediatrics in Detroit, the last of October.

Drs. Charles and J. W. McMartin of Omaha attended the Southwest Urological Society meeting in Dallas the latter part of October.

"State Medicine" was the subject discussed by Mr. M. C. Smith, our Executive Secretary, before the Optimist Club in Lincoln, October 19.

Dr. H. E. Eggers, Jr., practiced in Sutherland the month of October while Dr. R. S. Russell attended the meeting of the American College of Surgeons.

Dr. Hicken talked before groups of doctors at Dubuque and Fort Dodge, Iowa, on October 24 and 25 respectively, on the Diagnosis of Breast Lesions.

Dr. Harold Lynch of Fairbury read a paper on "Fractures" before the Annual Convention of Rock Island Surgeons in Des Moines the latter part of October.

Dr. Roy Fouts, Omaha, addressed the Insurance Institute of America in the latter part of October on "Socialized Medicine and its Effect on Morality and Morbidity."

Dr. Best spoke before groups at Sheldon and Emmetsburg, Iowa, on October 31 and November 1 respectively, on Recent Advances in the Diagnosis of Gallbladder Disease.

MARRIAGES

Dr. Lynn Sharrar of Omaha to Miss Mary Ellen Ahern of Shubert, in Lincoln, October 17.

DEATHS

Dr. Earl R. Lee. Recently of Leigh. Born in 1905. Graduated from the Temple University Medical College in 1932. Died in Fitzsimmons Hospital in Denver from carcinoma of the stomach October 8. Surviving are his widow and one daughter.

Dr. Edward L. Jones, Raymond, formerly of Greenwood. Born in 1864. Graduated from Lincoln Medical College in 1905. Died October 12. He is survived by his widow, Dr. Agnes Jones, a son and five daughters.

Dr. Henry H. Darby, Omaha, retired. Born in Illinois, graduated from Keokuk Medical College. Practiced in Michigan for many years. Came to Omaha in 1922. Died in an Omaha hospital at the of 78 years, September 13. Surviving are his widow, and one daughter.

Dr. Charles A. Miller, Thedford. Born in 1874. Graduated from Keokuk Medical College in 1902. Located in Nebraska in 1928. Died in Council Bluffs September 1. He is survived by his wife and a daughter.

Dr. David H. Carson, Kerville, Texas. Formerly of North Platte. Graduated from Creighton University in 1905. Was found dead on a country road between San Antonio and Kerville, November 2.

Dr. Hollis Brownson, Western. Born near Verdon March 28, 1887. Attended Doane College at Crete. Graduated from Jefferson Medical College in 1920. He began his medical practice in Plymouth, in 1921. From there he moved to Crete where he remained until 1923 when he located in Western. He died in a hospital in Lincoln, October 22. He is survived by his widow.

Dr. Ben Vitou, Portland, Ore. Graduated from Creighton Medical College in 1936. Served in the U. S. Navy aboard the hospital ship U.S.S. Ford. He was drowned near Chefoo, China.

BOOKS RECEIVED

Interns Handbook—A guide, especially in emergencies, for the intern and the physician in general practice—by Members of the Faculty of the College of Medicine, Syracuse University, under the direction of M. S. Dooley, A. B. M. D., Chairman of the Publication Committee. 523 pages, 16 mo. J. B. Lippincott Company, Philadelphia.

How to Conquer Constipation—A series of answers to questions which have occurred with frequency in the practice of a specialist in intestinal ailments—by J. F. Montague, M. D., Editor-in-chief of "Health Digest"; Medical Director, New York Intestinal Sanitarium; American Association for the Advancement of Science; American Society for the Control of Can-College; Fellow American Medical Association; Fellow New York Pathological Society; sometime Fellow New York Academy of Medicine and American Col-cer; Late of University and Bellevue Hospital Medical lege of Surgeons. 244 pages, 14 mo. J. B. Lippincott Co., Philadelphia.

RESULTS OF ARTIFICIAL PNEUMOTHORAX

(From Tuberculosis Abstracts)

Artificial, pneumothorax has won a well-deserved reputation in the treatment of tuberculosis. Its shortcomings have been acknowledged though difficult to evaluate. Collapse therapy has now been in use sufficiently long to appraise its real value. Several workers have recently published their results and nearly all emphasize the point that many factors based on analysis of the cases must be considered in order to judge pneumothorax results fairly. One such review is that of Aycock and Keller who analyzed the results of 530 cases of artificial pneumothorax treatment. Excerpts of their paper follow.

Bare composite percentage results in a group of cases do not reflect the true value of pneumothorax. To determine its efficacy the analysis must comprehend the varied pathological manifestations. This review of 530 cases of artificial pneumothorax induced at Fitzsimons General Hospital since 1931, undertakes the interpretation of results, primarily, on the basis of the dominant tissue reaction at the time pneumothorax was induced.

Tissue Reaction Types

Dominant tissue reactions can be embraced in three general groups: exudative, caseous pneumonic and fibrocavernous. All lesions of reinfection have their inception as an exudative process. Such lesions show a tendency toward resolution provided the issue is favorable. This group includes the lesions often designated as "soft." Regardless of extent, the exudative reaction must be looked upon as a phase in tissue response to tuberculous infection (or reinfection). Sooner or later some sort of proliferative response occurs in all such lesions. It seems more reasonable, therefore, to describe such tuberculous lesions, not as exudative, but as in the exudative phase. Many exudative lesions appear to clear up with slight residuals while many others progress to tissue destruction, replaced or circumscribed by fibrous tissue.

The caseous pneumonic group is distinguished from the exudative by its greater intensity and, in some cases, the extent of the tissue reaction. Conditions favoring the origin of such lesions are those which effect a high and sudden concentration of tubercle bacilli within a tissue. Necrosis may follow with areas of excavation and resolution is seldom more than partial.

In the fibrocavernous group the dominant tissue reaction at the moment is proliferative and represents an effort to repair or circumscribe tissue damage. Areas of cavitation enclosed by fibrous walls are part of the picture. Such lesions constitute a menace because they are potential chronic suppurative foci, which may act as sources for future spread of the tuberculous infection.

When Collapse Is Satisfactory

The authors apply the term "satisfactory collapse" to denote that the desired degree of collapse of the disease area was obtained, with the closure of cavities, if present. Sputum conversion was made a requisite for classifying treatment results as satisfactory in those cases still under collapse, or still in the process of re-expansion.

Of the total cases (530) in which pneumothorax was induced, 301 or 57%. were classified as "satisfactory collapse." All of the minimal cases (there were only 18) 86% of the moderately advanced and 44.5% of the far advanced cases, were in the "satisfactory collapse" group. These results confirm previous observations by many others to the effect that satisfactory results in pneumothorax diminish in proportion to the extent of the treated lesion.

Of the entire exudative group, 73.5% showed "satisfactory collapse." This was principally because of the nature of the lesions and the low incidence of dense pleural adhesions of symphyses encountered. Of the caseous pneumonic group (25 cases) only 28% were satisfactorily collapsed and of the fibrocavernous group, mostly far advanced cases, 26.5% were satisfactory.

The fact that by far the largest percentage of satisfactory results was obtained in the exudative group, prompts the authors to meet the argument that in this group there is a strong tendency toward spontaneous healing and that, therefore, many such cases will recover without collapse therapy. "On this point," say the authors, "there is no argument. The problem which confronts us lies in the determination of those cases which may or may not terminate favorably under expectant treatment. The characteristic of exudative lesions which admits of little argument is that they do not remain stationary, as such, for any considerable period of time. These lesions usually establish a trend, either progressive or recessive, in a very short time, so that no protracted periods of observation should be necessary to determine this point. As an illustration, many of our patients at Fitzsimons General Hospital are soldiers sent from distant stations, including our overseas garrisons. Transfer clinical records and x-ray films accompany these patients. In most of the cases showing exudative lesions, we are able to determine their trend upon arrival at this hospital by comparing our findings, clinical and x-ray with those noted at the home stations of these soldiers."

Watchful Waiting Not Always Safe

It would seem, therefore, that the statistical argument in favor of artificial pneumothorax becomes strong in all exudative cases which have failed to establish a favorable trend. The contrast in the percentage of satisfactory results between far advanced cases of the exudative and fibrocavernous groups (62% and 26.5%, respectively) leaves little to be said as to the choice of artificial pneumothorax as a therapeutic measure while the lesions are in the exudative phase. The percentage of satisfactory results in minimal and moderately advanced exudative cases should be even more convincing. In these groups, the highly satisfactory percentage results (100% and 87.5%, respectively) were obtained with inconsequential risk of untoward complications. Furthermore, the mere fact that a case may be classed as minimal or moderately advanced does not mean that it lacks the potentialities of a progressive lesion. It often transpires that the minimal or moderately advanced exudative case of today will be a far advanced fibrocavernous case a year hence. It would seem that such a patient who has been following a "watchful waiting" policy has paid dearly for the delay.

The relatively poor percentage results shown for the fibrocavernous group does not mean that such cases should not be given the benefit of an attempt at artificial pneumothorax. However, it should be borne in mind in initiating the therapy in cases of this group that the chances of satisfactory results are less and that if a satisfactory collapse is obtained it must of necessity be maintained for a longer period of time than in the exudative cases.

BUY CHRISTMAS SEALS

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> The well-conducted medical society should represent a clearing house in which every physician of the district would receive his intellectual rating, and in which he could find out his professional assets and liabilities. We doctors do not "take stock" often enough, and are very apt to carry on our shelves stale, out-of-date goods. The society helps to keep a man "up to the time" and enables him to refurnish his mental shop with the latest wares. Rightly used, it may be a touchstone to which he can bring his experiences to the test and save him from falling into the rut of a few sequences. It keeps his mind open and receptive, and counteracts that tendency to premature senility which is apt to overtake a man who lives in a routine.
>
> —Sir William Osler
>
> From "On The Educational Value of The Medical Society."

Nutritional Anemia in Infants

THE iron stored in the infant's liver at birth is rapidly depleted during the first months of life (Mackay,[1] Elvehjem[2]). During this period the infant's diet contains very little iron—1.44 mg. per day from the average bottle formulae of 20 ounces, or possibly 1.7 mg. per day from 28 ounces of breast milk (Holt[3]). For these reasons, and also because of the low hemoglobin values so frequent among pregnant and nursing mothers (Coons,[4] Galloway[5]), the pediatric trend is constantly toward the addition of iron-containing foods at an earlier age, as early as the third or fourth month (Blatt,[6] Glazier,[7] Lynch[8]).

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[1-8] Bibliography on request.

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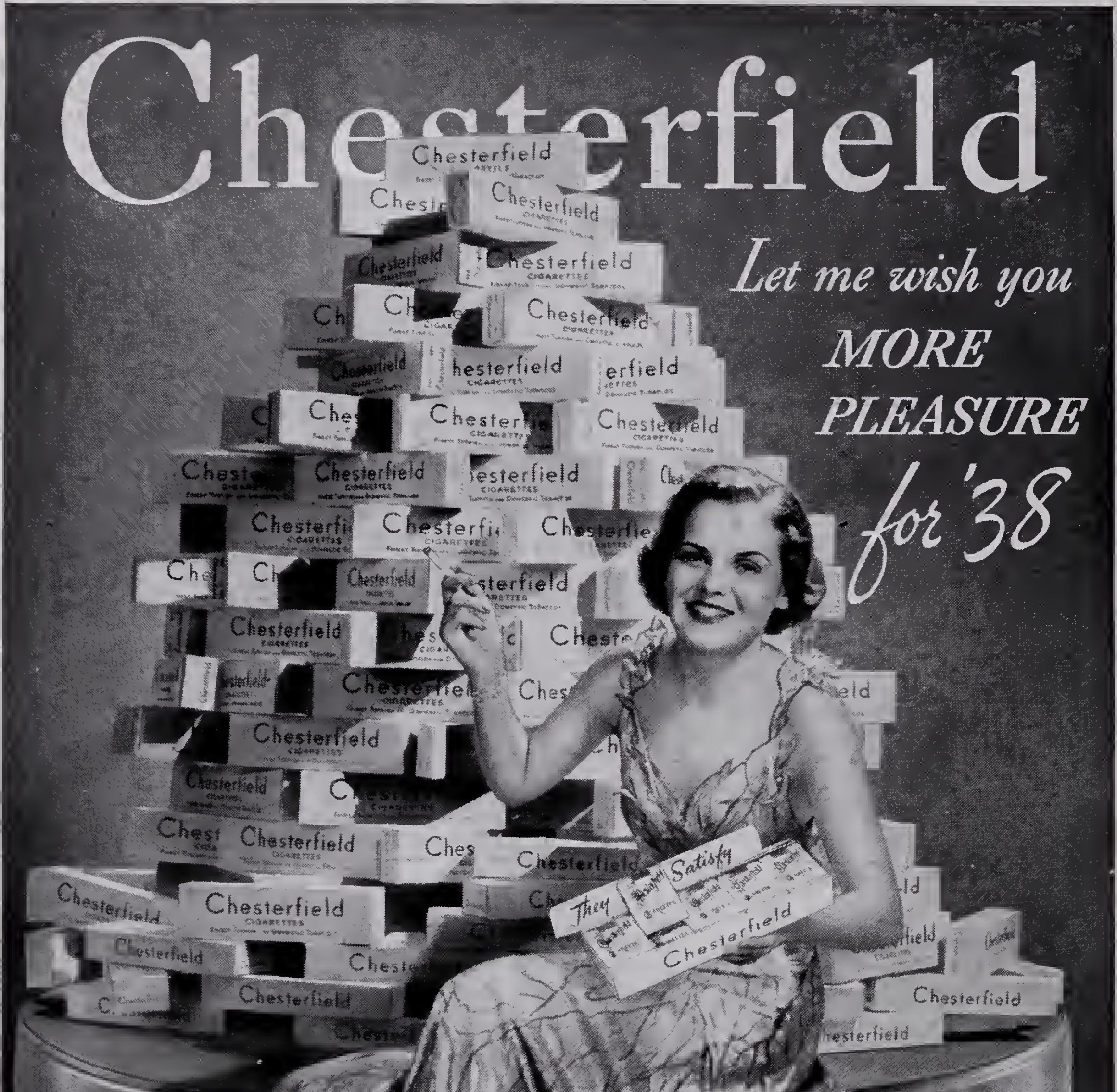

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Next Annual Session, May 2, 3 and 4, 1939, in Grand Island

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